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# the OIL AND GAS JOURNAL

FEBRUARY 3
1938

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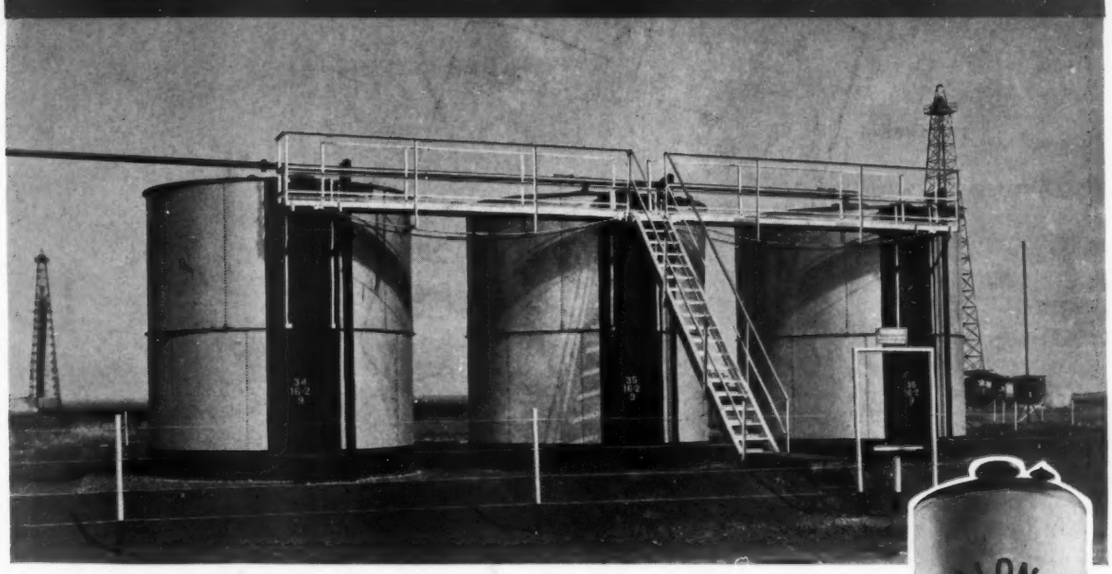

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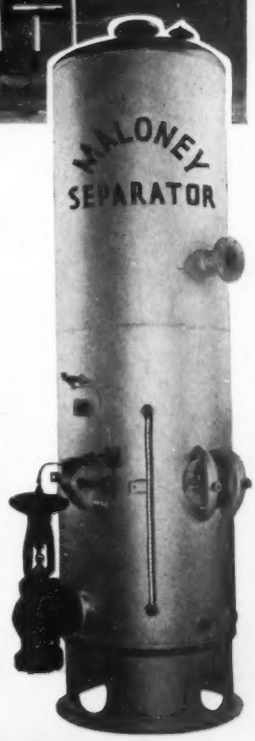


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# The Oil and Gas Journal

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## BY REDUCING THE GAS/OIL RATIO IN YOUR OIL WELL THROUGH THE APPLICATION OF A CEMENT SQUEEZE JOB

***A typical Cement Squeeze Job (done with a Baker Cement Retainer) to effect reduction of gas/oil ratios.***

### A Tomball Job

The gas-oil ratio in [illegible] Corporation's [illegible] No. 1, Tomball, Texas, producer, has been reduced from 58,000:1 to 400:1 by an effective squeeze cementing job that shut off the upper gas stratum without damage to the main body of the oil zone. This well was completed originally at 5573 feet, and the 5-inch casing had been cemented at 5565 feet. The indicated bottom-hole temperature was 163° F. The gas-oil ratio was so high that a reduction was required to prevent the production of the gas allowable far ahead of the oil allowable. The Tomball field produces from a very thin and gassy formation, and the high gas-oil ratio has reduced the production of oil in many wells.

A bridge plug was set at 5562 feet, the casing perforated from 5556 to 5558 feet, and a cement retainer set at 5550 feet. The perforations were placed as nearly as possible opposite the offending gas stratum. A small amount of fresh water was pumped into the formation ahead of the cement, the initial pressure having been 2000 pounds and the final pressure 1500 pounds. Seventy-five sacks of cement were mixed and squeeezd through the perforations, the initial pressure having been 1500 pounds and the final pressure 2200 pounds.

The cement, retainer and bridge plug were drilled out, and the well brought back on production with a potential flow of 176 barrels of oil through a quarter-inch choke. The gas-oil ratio was only 400:1, a radical reduction from the original ratio of 58,000:1. A cement retainer was used as a bridge plug.

In this well the cement set readily in the gas sand, but did not affect the oil zone. Although the cement was directed primarily toward the offending gas formation, no special effort was made to confine it to a very small area near the perforations. Any cement that contacted the oil stratum apparently did not set in that part of the formation.

High gas-oil ratios in the Tomball field have given trouble since the first wells were completed, and operators have made various efforts to reduce the flow of gas. In many wells the maximum quantity of gas is produced long before the oil allowable is obtained. It is obvious that the satisfactory reduction of gas-oil ratios will permit production of full oil allowables in wells that now produce more than 2000 cubic feet of gas per barrel of oil.

***Excerpt of article in the Oil Weekly of November 8, 1937 by Associate Editor, Brad Mills.***

### HERE'S HOW A SQUEEZE JOB (DONE WITH A BAKER CEMENT RETAINER) GIVES YOU A BIGGER SLICE OF THE PIE . . .

**Excessive gas/oil ratios present an important problem in many fields. For example, in certain Mid-Texas fields, the maximum gas/oil ratio (governed by State law) is such that operators have been forced to tolerate a limited production of oil in order to meet the gas/oil ratio requirements.**

**Cement Squeeze Jobs, (such as the one hereinin described and illustrated) are becoming more and more popular as a means of cementing off the offending gas strata to bring the well within the gas/oil ratio allowable . . . and the tool used to accomplish this important operation is the Baker Cement Retainer (referred to in the accompanying excerpt as the "cement retainer").**

**If excessive gas/oil ratios is a problem which confronts you, we suggest an investigation of this Baker Cement Retainer. What it *is* doing, and *has done*, for other operators in solving this particular problem, it can undoubtedly do for you.**

***Complete details concerning the design, operation and many important applications of the Baker Cement Retainer can be secured from any Baker representative or from any one of the conveniently located Baker offices.***

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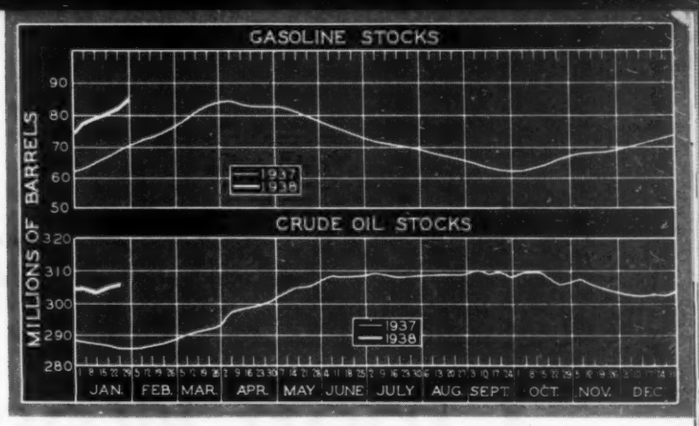
# BAKER CEMENT RETAINER




# California Output to New High

WHILE the rest of the country was reducing its production 160,000 barrels daily last week, California's was increased 8,500 barrels to 725,250, the largest for that state since 1929. The heavy crude output of the West Coast state—substantially in excess of the recommendations of the Bureau of Mines and the state's own proration committee—is due to the pressure for additional outlets from new and old producing areas and a continued heavy demand from the Orient.

**CRUDE PRODUCTION** *3,356,726 barrels daily average—down 151,377 barrels.*

**CRUDE STOCKS** *304,424,000 barrels as of January 22—up 745,000 barrels.*

**GASOLINE STOCKS** *84,844,000 barrels as of January 29—up 2,059,000 barrels.*

**REFINERY RUNS** *3,170,000 barrels daily week ending January 29—down 50,000.*

It is apparent that for the present the California oil situation must be divorced from the rest of the industry in considering curtailment requirements. California's production has been steadily increasing over the past year, but so far it has had little significance in domestic and export markets for the rest of the industry. The large gains in the needs of Japan and the increased fuel oil consumption of the American navy in Pacific waters, in addition to the substantial gains in domestic needs, so far have absorbed the rising output, with stocks of crude 15 per cent less than they were a year ago. So long as this demand from the Orient continues there is little likelihood of California producers and refiners increasing their shipments through the Panama Canal, where they compete directly with supplies from the Mid-Continent, Gulf Coast, Venezuela and Mexico.

Texas output, due to the one-day per week shutdown, was reduced 168,396 barrels daily. Because the Railroad Commission of that state has increased the allowables of some fields, it is improbable that the output will be reduced the full 200,000 barrels under January as projected at the time the shutdown plan was announced.

Oklahoma's February allowable is 535,000 barrels, 34,700 barrels daily under the Bureau of Mines estimated demand and 18,875 barrels daily under last week's average daily output. Small reductions this month, based on allowables, are scheduled for New Mexico, Louisiana and Kansas. It is also probable there will be further reductions in output as a result crude buyers prorating their purchases to the needs of refinery connections.

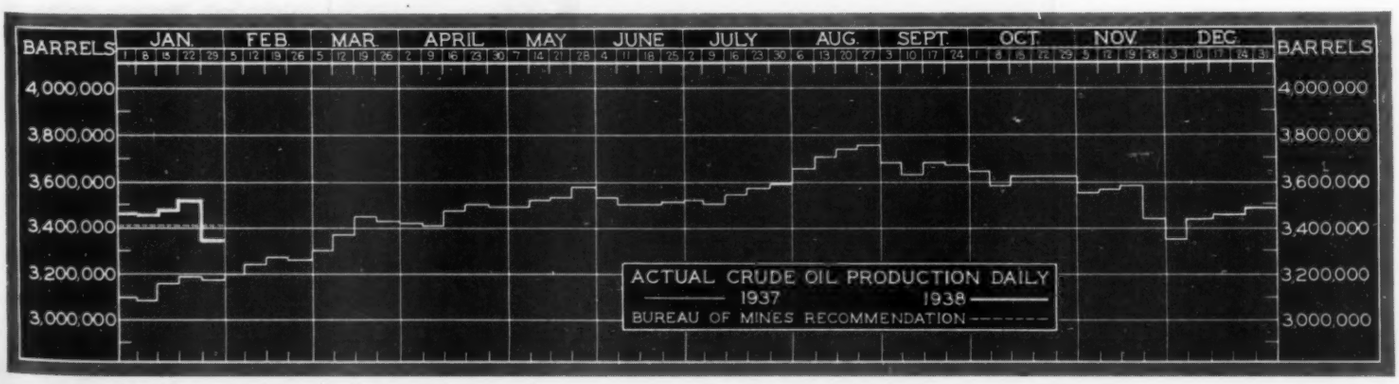
Reports from scattered areas outside California indicate that in February, refiners as a group will reduce their crude runs to stills materially in an attempt to bring about a healthier market situation for gasoline and other products.

Several complete shutdowns have been announced among the smaller refiners. Current inventory data indicate that these reductions in operations can be carried out without creating a shortage in any product.

## Daily Average Production for Week

| | Jan. 29 1938 | Bur. Mines Jan. est. | Jan. state allowables | Jan. 22 1938 |
|---|---|---|---|---|
| Oklahoma City | 134,025 | ..... | ..... | 119,950 |
| Fitts | 69,025 | ..... | ..... | 71,325 |
| Remainder of state | 350,825 | ..... | ..... | 352,375 |
| Total Oklahoma | 553,875 | 566,600 | 550,000 | 543,650 |
| East Texas | 423,250 | ..... | ..... | 492,898 |
| West Texas | 175,598 | ..... | ..... | 200,549 |
| North Central Texas | 94,350 | ..... | ..... | 104,099 |
| Texas Panhandle | 74,200 | ..... | ..... | 75,650 |
| East Central Texas | 79,250 | ..... | ..... | 89,100 |
| Gulf Coast Texas | 297,000 | ..... | ..... | 333,648 |
| Southwest Texas | 94,150 | ..... | ..... | 110,250 |
| Total Texas | 1,237,798 | 1,350,900 | 1,405,240 | 1,406,194 |
| North Louisiana | 78,470 | ..... | ..... | 80,370 |
| Gulf Coast Louisiana | 176,200 | ..... | ..... | 169,800 |
| Total Louisiana | 254,670 | 238,400 | 256,000 | 250,170 |
| California | 725,250 | 678,300 | 678,300 | 716,750 |
| Kansas | 187,075 | 179,300 | 186,472 | 190,075 |
| Arkansas | 42,455 | 35,200 | ..... | 41,010 |
| Eastern fields | 133,200 | 128,000 | ..... | 135,000 |
| Michigan | 48,273 | 54,100 | ..... | 48,914 |
| New Mexico | 107,160 | 103,100 | 107,100 | 107,170 |
| Rocky Mountain area | 66,970 | 72,900 | ..... | 69,170 |
| Total United States | 3,356,726 | 3,406,800 | ..... | 3,508,103 |

Decrease, 151,377 bbls. daily.



# Two Ordovician Tests May Open West Texas Fields

By MITCHELL TUCKER

FORT WORTH, Tex., Jan. 31.—The nine-year search for additional Ordovician production in the western Texas basin area is gathering new interest as two of the 14 wells now drilling to that horizon are showing for possible field openers.

Deep production from beds of Pennsylvanian or Ordovician age was first found in West Texas in the Big Lake field of Regan County about nine years ago. Since then a slow but continuous search for similar fields has been going on, and to date about 28 wells have been drilled and abandoned throughout the central basin area, all having production below the Permian as their objective. Attractive showings of oil have been logged in all of these wells which displayed any evidence of structure at all—exerting a stimulating effect to the continued search. Commercial producers were not completed following the Big Lake discovery until early in 1936 when Gulf Oil Corp. opened the deep horizon at Sand Hills of western Crane County. In 1935 a gas and distillate producer was opened in the lower horizon, however, by John M. Cooper and others on the Page ranch in south central Schleicher County, section 40, Block L, G.H.& S.A. Survey, which gauged 13,800,000 feet of gas with some sprays of oil and distillate, after plugging back from 6,257 to 5,540 feet.

The recent stimulation given to this prolonged search by the three promising wells now in the testing stage is again focusing attention on deeper possibilities in the basin, and prompting staking of several deep tests. These facts, together with the promise of increased geophysical mapping below the Permian, all point to 1938 as the most active year of wildcatting in the Permian Basin of West Texas to deeper levels.

Although very little actual data have been developed on the occurrence, position, or character of Ordovician formations, two facts seem definitely known at present.

First: When structural conditions are favorable and production is found in the Ordovician (particularly the Ellenburger of lower Ordovician) a very desirable high-grade oil is produced with accompanying high pressures and prolific initial productions. The oil is given up freely by the rocks of high effective porosity and large ultimate yields have already been made. This is best exemplified by the 26 Ordovician producers at Big Lake, which to date have each produced over 1,000,000 bbls. of oil, and promise to continue their economic producing rate far into the future. At both Sand Hills and Big Lake the oil is of very high gravity, ranging from 43 to 52 degrees A.P.I. corrected.

Second: Experience has shown that Ordovician structures in no way conform in size or type to the fields now producing from the Permian traps above. Whereas practically all the important Permian fields were occasioned by anticlinal folds along the eastern or western crest of the shallow basin, the deep traps thus far discovered seem to be associated with deep seated faulting and pronounced dipping. It has been learned from the drilling of deep wells on several of the present structures now producing from the Permian that this fact is no reliable guide to the presence of structural traps in Ordovician beds.

This fact, if no other, has encouraged explorers to extend their leasing and drilling to new wildcat locations, even where dry holes in the Permian have been drilled. Hence, all intervening acreage, especially in the southern half of the basin, is classified as "possibly productive" from the lower beds.

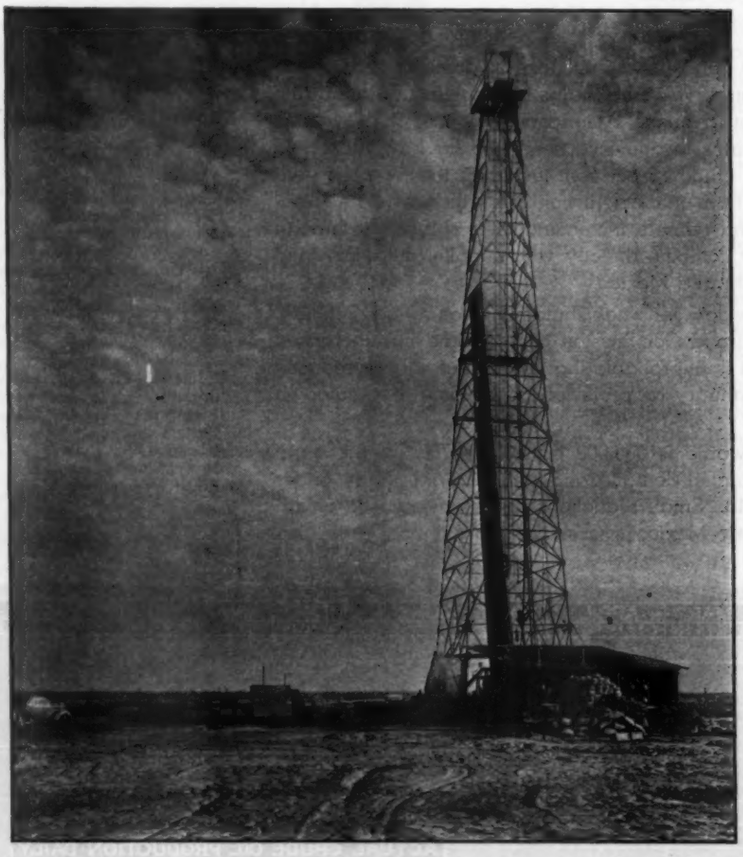
A large part of the central and southern basin area was taken under 10-year lease in 1928 and 1929. The expiration of leases which have been non-productive in the Permian will further prompt exploration to deeper levels where indications warrant during 1938, or before the 10-year lease term expires.

With exception of John I. Moore No. 1 McDowell, which was drilled to a total depth of 10,906 Ector-Midland-Glasscock County lines, where the deep tests have been drilled south of the Winkler-Ector-Midland-Glascock County lines, where the Ordovician is penetrated by the bit several thousand feet higher than in the northern part of the basin.

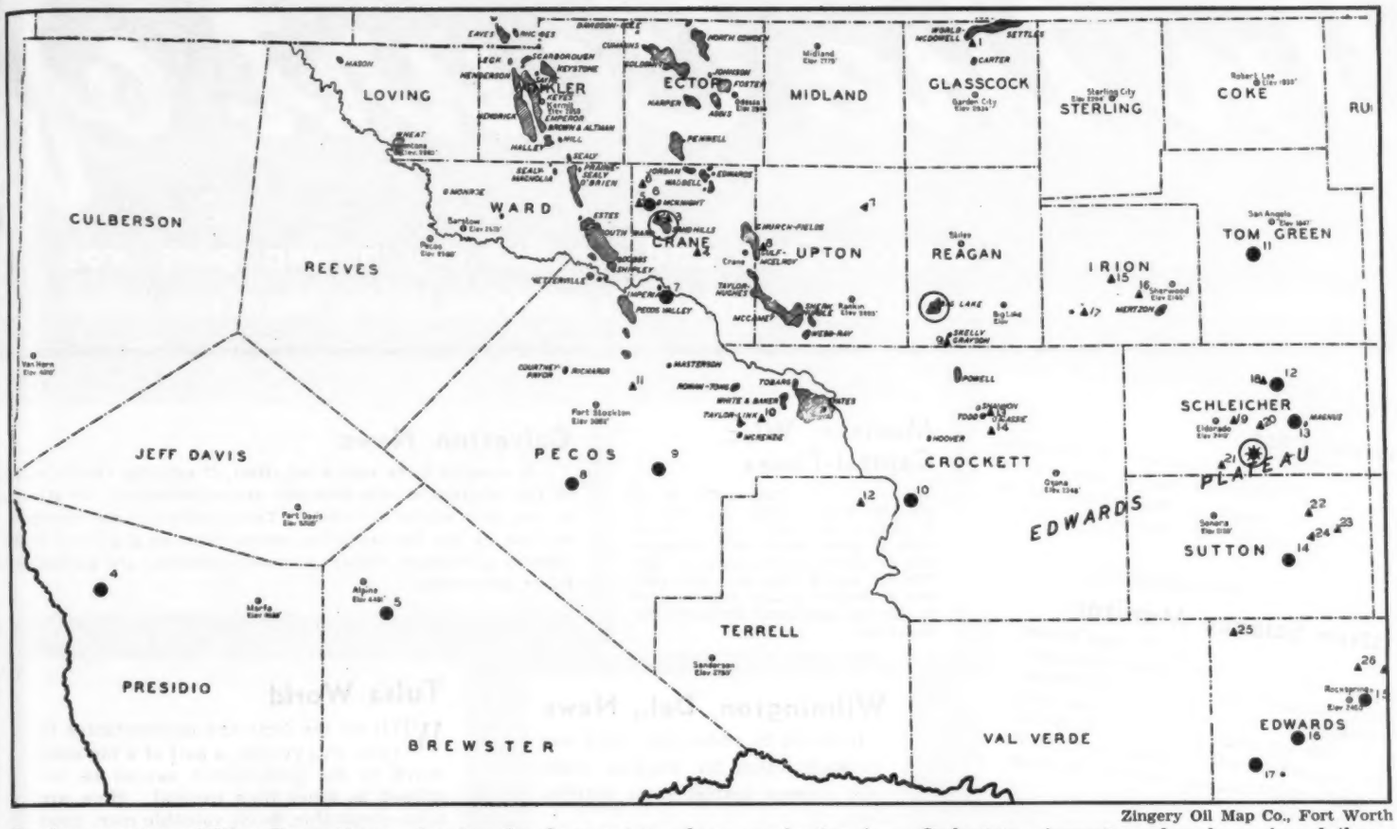
Trend play was the sole guide in Permian exploration work and lease purchases for a number of years. Improvements in the technique of geophysical mapping and their interpretation with the aid of subsurface work, resulted in the discovery of several important fields in this horizon during the past two years. Now, facing the probability of an intensive deep exploration on acreage heretofore proven nonproductive in the Permian, and not having sufficient deep drill holes to permit any worthwhile subsurface work on the irregular Ordovician formations, operators will probably look to some form of geophysical surveys for guidance.

All the deep wells drilled through the Ordovician series serve to establish a close association of Ordovician highs with igneous highs or uplifts, and therefore may offer a reliable basement floor upon which to map Ordovician beds. Magnetic surveys are known to give reliable points upon igneous formations under favorable conditions, and will probably play a part in the exploratory work.

The contention that these older formations will conform closely to the position of pre-Cambrian or older igneous material is confirmed by the knowledge that most of the intense structural movements of that area took place during Pennsylvanian times. Therefore, the Ordovician was involved and not the Permian



*The 500-horsepower diesel rig at Magnolia Petroleum Co. No. 1 McKee in the Imperial area of northern Pecos County, which promises to open a fourth field in the Ordovician*




Zingery Oil Map Co., Fort Worth

***Southern portion of West Texas Basin, showing the three points where production from Ordovician formations has been found (large circles); location of important wildcats abandoned in this deep formation (black triangles); and wells drilling in or to the Ordovician (black circles)***

which overlies the Pennsylvanian deposition.

The Ordovician structure at Big Lake (considerably smaller than that of the upper producing levels) is thought to have been formed by the intrusion of an igneous plug. In Loffland Brothers deep test at Sand Hills the bit went out of the Ellenburger at 7,115 feet and drilled pre-Cambrian granite from there to its abandoned depth of 7,158 feet. As an outstanding example of the great irregularity of Ordovician deposition, Shell Petroleum Co. deep test No. 1 Kirby-University, a few miles northeast of Fort Stockton in Pecos County, went out of the Permian directly into the granite and was abandoned at 5,204 feet. Subsequently, wells have been drilled about 10 miles to the north and south of this location and both encountered thick sections of both Simpson and Ellenburger.

Gulf Oil Corp. No. 103 McElroy, in the extreme west central part of Upton County, which set a new world record for depth when drilled, further proves the unconformable association with the Permian and older structures. The famous McElroy well was drilled on what was known to be near the highest point on the Permian along the eastern crest of the central West Texas basin (about midway between Big Lake and Sand Hills) but the Ordovician was found several thousand feet low in its drilling to 12,580 feet, and proved to be the lowest point of the Ordovician structural basin yet established. Very attractive showings were obtained in this well below 10,000 feet in Ordovician beds, however.

The accompanying index map of the southern part of the West Texas basin shows the locations of important wildcat wells which have been drilled and abandoned as dry during the past nine years (indicated by the black triangles), and the index numbers nearby identify the wells on the accompanying Table No. 1 of previous Ordovician wildcats completed. The large black dots point to location of Ordovician tests now drilling, and the index numbers identify each on the accompanying drilling report Table No. 2. Large circles designate the three points where commercial production has been found to date.

Sufficient data are not available to permit the construction of any representative "type" columnar section, or attempt any correlation with Oklahoma equivalents. In fact, no correlation has been definitely established with the Ordovician beds drilled in a good many tests in West Central and North Texas. Paleontological identification must be employed in logging the Ordovician series.

Thus far, two main subdivisions of the West Texas series have been established. First, the Simpson group (middle Ordovician) and second, the Ellenburger group (lower Ordovician). Big Lake wells log about 600 feet of Pennsylvanian formations and a thin section of Silurian, between the Permian and the Simpson, but at Sand Hills, where the Simpson itself is topped about 300 feet higher sub-sea, there seems to be an unconformable condition in the Pennsylvanian, Devonian and Silurian, as the bit goes out of the Permian into the upper Simpson. The Simpson at Sand Hills consists of dense limestone, green shales and sandstones. The Ellenburger is typically dolomitic in character, parts of which are highly porous when productive. The prolific production in this field is in porous zones of the Ellenburger, although some production is coming from the Simpson.

Magnolia Petroleum Co. deep test, 1 mile east of Imperial in northern Pecos County, No. A-1

*(Continued on Page 24)*

**TABLE 1—IMPORTANT WILDCAT WELLS DRILLED TO THE ORDOVICIAN OF WESTERN TEXAS DURING THE NINE-YEAR SEARCH**

(Does not include Big Lake or Sand Hills producing wells)

| Index number on accompanying map | and county | Operator and Well Name | Plug back or abandoned depth, feet |
|---|---|---|---|
| 1 | Glasscock | John I. Moore No. 1 McDowell | 10,960 |
| 2 | Crane | Loffland Brothers No. 3 Tubbs | 7,158 |
| 3 | Crane | Sinclair Prairie No. 2 Tubbs | 6,186 |
| 4 | Crane | Moore Brothers No. 1 Maxwell | 6,829 |
| 5 | Crane | Gulf Oil Corp. No. 3 M. B. McKnight | 6,230 |
| 6 | Crane | Wilcox Oil & Gas No. 1 McKnight | 7,228 |
| 7 | Upton | Humble Oil & Refining Co. No. 1 Pollock | 11,445 |
| 8 | Upton | Gulf Oil Corp. No. 103 McElroy | 12,580 |
| 9 | Reagan | Skelly Oil Co. No. 1 University | 9,967 |
| 10 | Pecos | Humble Oil & Refining No. 1 White & Baker | 9,811 |
| 11 | Pecos | Shell Petroleum Co. No. 1 Kirby-University | 5,204 |
| 12 | Terrell | H. H. Sides No. 1 Phelps | 5,635 |
| 13 | Crockett | Stanolind Oil & Gas No. 1 J. S. Todd | 8,041 |
| 14 | Crockett | Superior Oil Co. No. 1 Todd | 7,948 |
| 15 | Irion | Benedum & Trees No. 1 Suggs | 8,267 |
| 16 | Irion | Kingwood Oil Co. No. 1 Suggs | 8,718 |
| 17 | Irion | P. H. Williams No. 1 Ashe | 8,900 |
| 18 | Schleicher | Humble Oil & Refining Co. No. 1 Ike Honig | 6,470 |
| 19 | Schleicher | Schleicher County Oil Tests, Inc. | 6,527 |
| 20 | Schleicher | Empire Oil & Gas No. 1 Tisdale | 6,108 |
| 21 | Schleicher | Teas & Grant No. 1 Allison | 5,080 |
| 22 | Sutton | Paul Teas et al No. 1 Mower | 4,750 |
| 23 | Sutton | L. G. Priest No. 1 Allison | 4,017 |
| 24 | Sutton | Independent Oil & Gas | 4,315 |
| 25 | Edwards | Phillips Petroleum Co. No. 2 Holman | 8,123 |
| 26 | Edwards | McMan Oil & Gas No. 1 Schreiner | 3,895 |
| 27 | Edwards | Dalgish et al No. 1 Peterson | 5,206 |
| 28 | Edwards | Stout No. 2 Peterson | 4,595 |

# In the Court of

**Editorial opinion of metropolitan and smaller city newspapers was predominantly critical of the government's position in the Madison case.**

## Houston Post

It would be interesting to know to what extent the jury at Madison was subconsciously influenced by the ballyhoo against "monopoly" with which the country has recently been flooded.

## Christian Science Monitor

Or it may prove merely an ineffective form in an administration nominally committed to the popular interests. If the gasoline buying program of the oil companies was inimical to the consumer after NRA, it cannot have been particularly friendly to him under that aegis.

## Chicago Daily News

If most monopolies are bad—and we think they are—why did the administration wait until 1937 to bring suit? Why did it not bring suit before? What faith can be placed in either its wisdom or its sincerity, when it belatedly prosecutes an industry for doing the very things which it was itself urging—nay, compelling—that industry to do only four years earlier?

## St. Louis Globe-Democrat

Nevertheless, they were convicted of violating the antitrust act. They seem, therefore, to have been "double-crossed" by the administration.

## N. Y. Journal of Commerce

Certainly, this case calls for no strengthening of the anti-trust laws. Rather, business men might ask that the law be amended to permit them to take steps to stabilize prices, where this has been done with the approval of a Federal agency, without fear of criminal prosecution.

## Dallas News

This is a sensible policy. Had the pact plan been followed during the period that involved the Madison defendants in their present troubles, the oil companies would have obtained both conservation and market stability without difficulty, the producer would have marketed his wares at a fixed rate and the consumer would have had to pay a fixed price. Ours is a queer world, seldom an altogether disinterested one.

## Madison, Wisc. Capital-Times

The verdict in the oil trial is a healthy sign because it means that men and corporations of great wealth and influence can be convicted in a court of law The old saying that you can't convict a million dollars has at least in this one important instance been disproved.

## Wilmington, Del., News

It should be added that there was no good reason for bringing criminal charges against these defendants.

## Springfield, Mass., Republican

One swallow does not make a summer, we have long been told; and one jury verdict, still untested in the higher courts, does not resuscitate an antitrust law thought to be half dead.

## Charlotte, N. C., News

And yet there's something contradictory about it, something half-hearted in the Government's belated decision to prosecute. For what these oil companies did in violation of the anti-trust acts was precisely what they had been accustomed to doing with Federal sanction under NRA.

## New Haven Register

For having done about what they were put up to, they have been convicted under laws of which, they claim, they were led to believe an issue would not be made. That is called a sweeping government victory.

## Indianapolis News

It is assumed that the case will be appealed, which will afford further opportunity for public mediations on the vicissitudes of living up to laws which are swung here and there in the breezes of political opportunism.

## Galveston News

It remains to be seen what effect, if any, the verdict will have on the administration's promised recommendations for strengthening the laws against monopoly. The administration's monopoly policy, like its Far Eastern policy, seems to be on a 24-hour basis. It depends on whether current business conditions are politically helpful or the reverse.

## Tulsa World

WITH all the facts and circumstances in view, this verdict, a part of a big legal move by the government, cannot be regarded as other than ironical. Here are men—reputable, busy, valuable men, good citizens and enterprising business men—branded as criminals for doing an obviously popular thing. In such proceedings there is no suggestion or hope of stabilizing industry by voluntary, co-operative efforts.

## Baltimore Sun

However, if the Government intends to follow through with its anti-monopoly campaign, it will be necessary for Mr. Roosevelt to decide that his Administration will proceed in that direction and not be diverted from time to time by excursions into coöperation and agreements to reduce production and other expedients so attractive to the President in the past.

## Richmond, Va., News-Leader

Which is the wiser course—to conserve by moderate price regulation or to exhaust our gasoline and then to develop a synthetic product three times as high?

## N. Y. Herald Tribune

We do know that it brilliantly illustrates the almost grotesque tangle to which the anti-trust and monopoly problem has been reduced, and the crying need for clarifying Administration policy on a dozen interrelated questions—monopoly, stabilization, price policy, "unfair" competition, industrial co-operation, basing points, identical bidding and so on—if the Administration is even to begin to approach an issue which it pretends to be seriously attacking.

# Wider Retail Gasoline Margins Bring Complications

The trend toward wider margins in gasoline retail sales apparent over the past few months is bringing complications not anticipated with the general adoption of the Iowa plan in marketing during 1936 and the early part of 1937.

The present situation is due to the tendency on the part of independent dealers not to lower their retail prices on gasoline when posted dealer quotations are reduced to them by refiners and jobbers. This has resulted in an unhealthy marketing condition in some areas which may have considerable influence on prices for the entire industry through 1938.

Developments have been the opposite of what many expected with the introduction of the Iowa plan. Adaptations of this plan have become effective in the several marketing areas, but the net result in all cases has been to divorce retail marketing from the control of refiners and jobbers. Some predicted that under this arrangement the independent dealers would increase sales at their stations through price concessions. This method of expanding volume through reduction of the margins allowed for marketing is commonly followed in the sale of staple commodities and in general is considered a sound merchandising policy.

Many who are connected with refining and marketing branches of the industry thought this change if it materialized would solve a problem of too many wholesale and retail outlets with which the oil business has been confronted over the past 15 years. It was felt that the independent dealers left to themselves would increase the volume of sales at their better located stations, resulting in the elimination of uneconomic units. Fewer retail units, larger volume per unit for those remaining and narrower margins would place the wholesale and retail branches of the industry on a sounder basis.

To date these objectives have not been achieved. Independent dealers selling branded products of the larger refining organizations have not endeavored to reduce margins, but on the contrary have done everything they could to widen the spread between the delivered tank-wagon price at their stations and the price paid by consumers.

### Middle Western States

There are numerous examples of this situation in all parts of the country. Conditions in the Middle Western states obtaining their supplies from local refineries or from the adjoining Mid-Continent and Rocky Mountain areas will serve as an example. The posted dealer tank-wagon price on gasoline in June last year was reduced .5 cent and in November it was lowered an additional .3 cent. Up until the end of the year in most cases there were no corresponding reductions in the retail prices for the regular and premium grades of gasoline. This meant that a dealer who formerly had a margin of 3½ to 4 cents in the sale of these grades of gasoline had 4.3 to 4.8 cents per gallon on which to operate after the dealer reductions became effective. In the meanwhile tankcar prices on all grades of gasoline at Middle Western and Mid-Continent refineries have declined from 1 to 1⅝ cents under the highs of last year, with much larger reductions in the case of natural gasoline. Thus as the new year started there were numerous important consuming points at which gasoline tankcar and dealer prices had decreased up to 1⅜ cents per gallon with no change in the service station quotations.

The dealers in most cases have justified their action on the ground that the margin for retailing gasoline has been inadequate. They claim that a 3½-cent margin is too low and they have sought margins up to 5 cents per gallon. In many of the larger cities these independent dealers over the past two years have organized strong associations. These associations have made their influence felt in the maintenance of the wider margins and other uniform practices which they believe to be to the best interest of the membership.

What happens in these retail operations is no longer under the control of the industry generally, but unfortunately it is apparent that they will continue to influence its operations. This fact has become more apparent since the first of the year with evidences of a break in the gasoline retail price front.

To appreciate fully the present situation in wholesale and retail marketing it is necessary to understand the developments of the past few years in all branches of the industry which directly or indirectly affect marketing operations. Up until the late twenties the workings of sup-

**By C. O. WILLSON**

ply and demand in relation to prices were relatively simple.

With no control over crude oil production, one or more new fields often quickly brought an overproduction of crude supplies. This was first reflected in excessive crude runs to stills and a decline in the gasoline tankcar prices. This low-priced gasoline within a few weeks brought price-cutting in tank-wagon and retail gasoline sales. In those days all gasoline looked alike to the consumer. If a station reduced its retail schedules 1 or 2 cents per gallon, customers immediately flocked to that station and the other stations in that locality were compelled to reduce their prices, including the units owned and operated by the major companies. This brought a reduction in crude prices, followed by a slowing up in field operations, which in turn balanced crude oil supply and demand with an upturn in gasoline tankcar prices at refineries. This recurring cycle can easily be traced in the years previous to the passage of conservation laws by the oil-producing states and the general acceptance of proration by producers.

Since that time there has been greater control of production. New fields are not allowed to reach their peak production in a few months, and as a result crude prices have been relatively firm, moving within a narrow price range particularly since the summer of 1933. The importance of this control has been indicated the past year. The first half of 1937 saw steady increases in crude storage. Since that time, however, conservation authorities have endeavored to balance supply and demand and as a result about one-third of the crude run to storage the first half year has been withdrawn.

This control of the crude production did not prevent refiners from running too much crude to their stills over a large part of 1937 and so far this year, and gasoline tankcar prices have gradually weakened. There has not been as rapid a decline as there was before the period of crude proration control but it has been sufficient to disturb the normal price relationships between the different divisions of marketing. It is now apparent that if this development continues it is certain to bring about price adjustments extending from the posted crude prices at the wells to the filling stations.

### Significance of Quality

There is another important difference between conditions now and those 10 to 20 years ago. In those earlier days "a gallon of gasoline was a gallon of gasoline" so long as it met the general specification for U. S. Motor fuel. There was little if any difference in the grades of gasoline as regards their performance in the low-compression engines, and consumers refused to pay more than the generally accepted price levels.

Prices were often lowered 2 or more cents per gallon overnight in a city or town due to the opening of a cut-rate service station. In many cases these stations were combination bulk and retail stations located along railway sidings. The source of supply usually was a small refiner who had been compelled to lower his tankcar prices to less than the cost of production due to the overproduction cycle previously explained.

The advent of high-antiknock gasoline measured in octanes has changed this situation. In general, low-octane gasoline coming from small skimming or blending plants is not the threat to general markets that it was a few years ago. It does not give satisfactory performance in the high-compression engines built over the past four years, and owners of these cars refuse to buy it regardless of price. As the older cars go out of service it is probable there will be no market for these low octane gasolines except as cheap blending material for gasoline of exceptionally high antiknock rating.

In effect this has meant that the cut-rate stations are not the factor in gasoline marketing that they formerly were. It has not been difficult to maintain volume for the regular and premium grades of gasoline at points where cut-rate material was available at 2 or more cents per gallon under the regular price. There are important consuming centers in the Southwest where third-grade and unbranded gasoline over the past year have been from 5 to 6 cents per gallon under the regular-grade price. This wide differential includes the third grades sold by dealers who also handle the branded regular and premium grades.

These situations exist in cities close to the oil fields where third-grade material is available in truck deliveries from small refineries and natural gasoline plants. While some of this gasoline has an antiknock rating of 60 octanes or better, it is not uniform and the low-octane material gives all of the third-grade material a poor standing with consumers, most of whom have continued to buy the higher-octane branded grades of the major companies. This situation explains the ability of independent dealers last year to maintain service station prices in the face of the lower tankcar and posted dealer quotations.

Market students have predicted that this situation could not continue indefinitely and there have been numerous indications that they are right in the threatened collapse of retail price structures at several points. The maintenance of wide margins in retail sales by independent dealers while slower to react than in previous years is having the usual repercussions.

### Branded Products Decline

In the first place it has strengthened the position of the companies selling the unbranded gasolines, particularly in cases where they are able to furnish a high-octane motor fuel including ethylized material. State gasoline tax reports up to January 1 show that as a group sales of the well-known branded grades of gasoline did not keep pace with the gain in total consumption. For instance in three Middle Western states the average gain in domestic consumption for the year was about 10 per cent. The average gallonage gain of the large companies was 7 per cent while products of the "independent" companies increased 15 or more per cent.

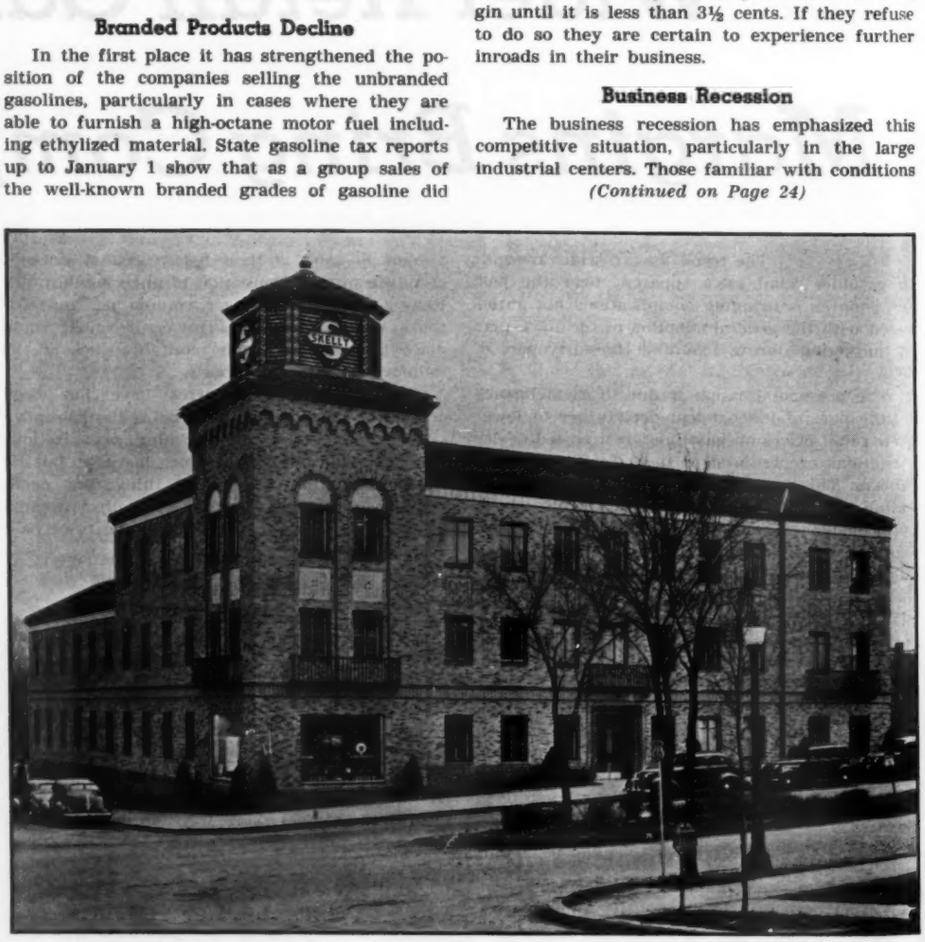
This situation was not immediately serious because so long as the large companies could maintain gains of 5 or more per cent many of them were satisfied. Now that the rapid increase in demand has ended with a total gain for 1938 of 5 per cent or less in prospect, these larger companies are faced with a situation in which their dealers cannot furnish a normal outlet for their products due to the inroads of the dealers selling products which are not nationally known.

Many of the dealers are also dissatisfied with conditions brought about by their own action. In refusing to reduce gasoline prices in line with the lower prices they were paying for tank-wagon deliveries they reasoned that the increased margin would more than take care of a small reduction in volume of business should it materialize. In pursuing this policy they have made themselves vulnerable from two sides. The cut-rate dealer who has been able to buy higher-octane gasoline than he was when tankcar markets were tight is getting a larger volume of their business. Second, they have been confronted with a situation in which other dealers selling branded products have been giving open or secret rebates. This has been particularly true in the case of large commercial accounts. These rebates amount to 1 or 2 cents per gallon. If the dealers meet these prices they reduce their margin until it is less than 3½ cents. If they refuse to do so they are certain to experience further inroads in their business.

### Business Recession

The business recession has emphasized this competitive situation, particularly in the large industrial centers. Those familiar with conditions

*(Continued on Page 24)*




*New building housing marketing headquarters of Skelly Oil Co. in Kansas City. Spanish design harmonizes with general architecture of section in which it is located. Over 7,000 attended recent formal opening of building*

# WASHINGTON

By Henry D. Ralph

WASHINGTON, Jan. 31.—Recommendations to be made to the president by the group of 500 small business men meeting here may have an important influence on the course of the administration's policy toward business in general.

President Roosevelt apparently is undecided whether to move toward strict enforcement of competition through tightening of the antitrust laws or toward a liberalizing of these laws to permit a degree of cooperation among competitors, and is under considerable pressure from groups of his advisors sponsoring one course or the other. Since the president has frequently expressed himself in favor of policies to aid small and local businesses, the results of the conferences may go a long way in helping him to make up his mind.

The business men were invited by Secretary of Commerce Roper from a list of those who have written either to the secretary or the president recently making suggestions for governmental policy for improving business conditions or for new economic legislation. A general invitation was also issued. The conference will meet with department of commerce officials, divide into groups, frame recommendations, and appoint a committee of about a dozen to convey the results to the president.

### Advisors Clash

Although it has never been a secret that the president's advisors are split on the question of regulation of competition, the acuteness of this conflict was illustrated by two speeches, one by Donald R. Richberg, former NRA chairman, and one by Robert H. Jackson, assistant attorney general and nominee for U. S. solicitor general. While each insisted he was giving only his personal views, both are high in White House councils and have recently been in frequent conferences with the president.

Mr. Richberg advocated more self-regulation of business with the aid of government and less exterior regulation of business by the government. He declared that business cooperation and discipline cannot be enforced by criminal punishments, but business could organize itself to cooperate in its general purposes while competing for individual success. He suggested three specific legislative objectives: a clearer definition of monopolistic and unfair practices; an administrative body empowered to pass on the prima facie legality of cooperative activities; and provision that approval of such agreements would remove the liability for criminal prosecution while retaining machinery for civil action to obtain relief from illegal combinations.

Mr. Jackson argued that suspension of the antitrust laws to permit a degree of business planning might lead to detailed economic planning under the strict control of the government with eventual regulation of employment, wages, production schedules, prices, and technological improvements. He said production cannot long be planned except at the cost of a planned price level, an allotment of a percentage of idleness among the different units of the industry, and a planned regularization of employment. He opposed any move to give immunity from the antitrust laws and declared the increasing concentration of industry requires a tightening of the antitrust laws to force more competition rather than less.

President Roosevelt's recent off-hand remarks about the desirability of a loose body of business men to suggest industrial production schedules is viewed with considerable alarm by those of his advisors who not so long ago felt they had sold the president on a vigorous antimonopoly, trust-busting campaign, but in view of the president's known inclination toward planning and government control, Washington observers believe that at present he is leaning toward some scheme for cooperative business control rather than undiscriminating enforcement of competition.

### Madison Echoes

The government's "victory" in the Madison oil case has not lessened the desire of department of justice officials for legislation to put more teeth in the antitrust laws, even though it has demonstrated that criminal penalties may be invoked against an industrial stabilization plan conducted more or less openly and in good faith. The constant threat of criminal penalties is not relished by all members of congress, and the justice department's antitrust policy has come in for considerable criticism in connection with the investigation being made by the house judiciary committee into the activities of Federal Judge Ferdinand Geiger in Milwaukee, who recently dismissed a federal grand jury investigating antitrust charges against automobile financing companies on the ground that the department of justice was simultaneously negotiating with the companies for a civil consent degree. The attorney general complained of this to the house committee, but the investigation so far has resulted in more criticism of the department than of the judge. Assistant Attorney General Jackson told the committee it is necessary to threaten a criminal indictment and act through a grand jury to secure evidence in antitrust cases, to which several committee members replied that this practice appeared to be a form of the third degree. Mr. Jackson intimated he would like a change in the law to permit the simultaneous use of civil and criminal procedures in antitrust cases to replace the present procedure under which the department is virtually compelled to choose between criminal and civil action before a case is started.

### President on Prices

President Roosevelt's declaration that prices should be reduced but wages kept at their present levels has aroused a great deal of comment and criticism. The declaration came in answer to a question at a press conference this week, but the president was prepared with a reply issued for direct quotation. He declared in part: "A mass production industry depends on volume for profit. The only way to get volume up is to produce goods for a price the public will pay. But that does not mean that such price reductions can come out of wages. Those who believe in the profit system must recognize that those who get the profits when business is good must bear the losses when business temporarily is slack."

Ironically, this statement about absorbing losses had an unexpected effect in increasing the determination of many members of congress to repeal the undistributed corporation profits tax rather than to accept the modifications of it proposed by the subcommittee of the house ways and means committee. During the hearings on the subcommittee's proposals, a large number of business men and economists declared that this tax, even if modified as the committee suggests, prevents business firms from accumulating surpluses which can be used to absorb losses and keep up employment and pay rolls during slack periods, and the president's insistence that business do just this has emphasized the criticisms of the surplus tax.

### National Defense Message

The oil industry will become increasingly important in national defense if congress approves the recommendations made by President Roosevelt for an enlarged national defense program. While the navy will get the lion's share of the increased appropriations, very large sums of money will be allotted to the army for increased motorization. Army officials have plans for mechanizing more cavalry units, building large numbers of tanks, and motorizing field artillery.

# Pennsylvania Industry Is Concerned Over Investigation and Legislature

OIL CITY, Pa., Jan. 31.—The oil industry in Pennsylvania is looking to the next session of the legislature with gravest concern. That session, unless a special meeting is called, will be held next January. It will consider the report of the present state oil investigation commission and the proposal of a group of oil producers that a state oil conservation law be enacted.

The commission was authorized by the 1937 legislature to study the oil industry, then described by Governor Earle as "demoralized," to determine whether it should be subjected to some state regulation along public utility lines. It came into being April 28, 1937. It inaugurated a series of hearings, devoted with few exceptions to marketing activities, that proceeded smoothly until 10 days ago when Petrol Corp., of Philadelphia, was granted an injunction by the Dauphin County court.

The corporation, subpoenaed to submit contracts and confidential papers at a hearing in Philadelphia February 1, contended such action "can serve no reasonable or proper public purpose" and would "cause irreparable loss, injury and damage" to the company. It also objected on the score that William H. Godfrey, a member of the commission, is an officer of Major Petroleum Co. and Water Terminal Co., business competitors of Petrol Corp.

During the last week in December and early in January the commission sent out 39,500 fact-finding inquiries, 100 accompanied by subpoenas, designed to provide it with detailed information on every phase of operation of producers, pipe line operators, refiners, jobbers, distributors and service station operators. The queries sought all manner of cost data, including advertising, and information concerning contracts, propaganda, corporate structure, associations, location, volume, etc. The Petrol Corp. was among those served with subpoenas. Although many companies asked for time extension, more than 10,000 queries had been returned.

President Judge W. M. Hargest granted Petrol Corp. the temporary injunction on January 19. On January 24, a three-judge Dauphin County court ruled against holding of the Philadelphia hearing and, with consent of counsel of both Petrol Corp. and the commission, the temporary injunction was continued until a court hearing.

The commission asked the Dauphin County court to dissolve the injunction and Judge Frank B. Wickersham set February 7 for a hearing when Petrol Corp. must show why the injunction should not be removed. At the same time the commission withdrew the subpoena served on the company.

Judge Ralph H. Smith of Pittsburgh, chairman of the commission, described the Petrol action as the "first attempt at obstructionist tactics." When the subpoena was withdrawn and the commission had requested the court to dissolve the injunction, Judge Smith stated, "Temporarily all hearings and immediate steps to further the investigation have been halted in compliance with a court order. As soon as we can clean up the legal technicalities we shall proceed in our investigation but we'll have to wait until after the court hearing February 7 to see what develops."

Announcement of the delay prompted directors of the Central Pennsylvania Oil Producers Association and Robert L. Yost, chairman of the Western Pennsylvania Retail Gasoline Dealers' Association, to request members to furnish the requested information voluntarily.

Yost said, "It is a well known fact that the retailers as a class are confronted with ruinous trade practices and price discriminations . . . the present investigation is the first unbiased attempt to conduct a scientific study of the situation in an effort to cause the adoption of legislation to remedy the abuses to which retailers are subject." He also declared "the injunction . . . is the best evidence we have that the commission is about to show who has been getting the gravy at the expense of the retailer and the consumer."

The cooperation provided by all branches of the industry is evidence of its hope that the commission will present an unbiased, free-of-politics report to the legislature. Political observers, however, are inclined to view the investigation, sponsored by Governor Earle, as a political gesture. They point to the fact he rendered judgment on the industry before the investigation got under way. When he signed the bill he commented, "The chaotic condition of the oil industry in our state makes an investigation highly desirable. Monopolistic practices, price wars and similar cutthroat activities have seriously interfered with the normal operation of this industry. . . . I am convinced that this commission through its investigation can do much to restore stability to this demoralized industry."

Further evidence of his desire for state control was shown at the recent Interstate Oil Compact Commission meeting when Walter A. Jones, Pennsylvania representative, quoted him as saying if Pennsylvania producers did not curtail production and stabilize the industry within the state he would take steps to bring the industry under governmental regulation. Following the Madison trial, the governor said, "There never was a greater need for thorough-going study of the operation of the oil industry which controls one of primary natural resources than now. The verdict at Madison . . . is only further evidence and proof of the need for the type of study being made by the commission in this state."

It was shortly after Jones' statement at Oklahoma City that directors of the Central Pennsylvania Oil Producers' Association met in Oil City and adopted a resolution favoring a state oil conservation law and appointing a committee to draft a bill for presentation to the legislature. It has been indicated it will follow the lines of control laws in mid-western states, restricting wells of large production and permitting others to produce unrestricted. Such a bill would be aimed directly at water-flood producers in the Bradford field and may be expected to engender substantial opposition from them.

The fact that 12 months remain before either the report of the investigation commission or the proposed conservation law reaches the legislature makes hazarding what form either will take decidedly unreliable. A conservation law proposed several years ago died before reaching the legislature. Another important factor is that a state election will be held this fall and since the constitution prohibits a governor from succeeding himself, the Earle influence for government control of the industry will not be so strong.

## Six Weeks Wait at Madison Before Court Opens Hearing

MADISON, Wis., Jan. 31.—It will be six weeks before the next legal action in the oil case. Judge Patrick T. Stone said he would hold court at Superior, Wis., during February and that it was likely he could not hear before March 15 motions filed by defense attorneys at Madison Tuesday.

Sentencing has been deferred pending disposition of the motions, and the defendants continue under personal bonds.

## South Louisiana Geologists Elect Officers at Lake Charles

The South Louisiana Geological Society held its business meeting in the Majestic Hotel, Lake Charles, La., January 24. The following officers were elected for 1938: John Mahoney, Union Sulphur Co., president; Dean Metts, Humble Oil & Refining Co., vice president; W. R. Canada, Stanolind Oil & Gas Co., secretary, and Baker Hoskins, Shell Petroleum Corp., treasurer. Following the meeting John Ivy, Union Producing Co., gave an interesting paper on the Rodessa field.

## Pipe Freight Rate Hearings At Dallas and Galveston

The Interstate Commerce Commission has set for hearing at Dallas, Tex., February 24, and at Galveston, Tex., March 2, two long pending cases involving freight rates on iron and steel pipe and casing. The case at Dallas, involves the all-rail rates on wrought iron and steel pipe and casing from, to and within the southwest. The case at Galveston involves rates from eastern manufacturing points to Louisiana, Texas, and New Mexico via rail-ocean-rail routes. The territory embraced in the all-rail case comprises Oklahoma, Arkansas, Louisiana, and Texas, and the outcome will affect rates to other southwestern oil-producing states such as Kansas and New Mexico.

The interest of the shippers in the southwest will be represented at the hearings, as in the past, by the Southwestern Pipe Consumers' Committee, whose staff of rate experts is preparing evidence and testimony for the hearings.

The general chairman of the committee is J. L. Burke, traffic manager, Stanolind Pipe Line Co., Tulsa; and the vice chairmen, Oklahoma—W. W. Klingensmith, traffic manager, Tulsa Chamber of Commerce; North, East and West Texas—W. M. Maddox, traffic manager, Magnolia Petroleum Co., Dallas; South Texas—C. H. McNair, traffic manager, Humble Oil & Refining Co., Houston; and Louisiana and Arkansas—Harry Graham, traffic manager, Standard Oil Co. of Louisiana, New Orleans.

## Texas Commission Sets February 18 For Hearing

AUSTIN, Tex., Jan. 31.—The next statewide oil proration hearing will be held February 18. The Sunday shutdowns will continue until March 1, unless the commission decides otherwise after the hearing.

## Northeastern Oklahoma A.P.I. Chapter Meets at Bartlesville

The northeastern Oklahoma chapter of the A.P.I. Division of Production was host to members of the A.P.I. and many others interested in the oil industry at the monthly meeting in Bartlesville January 26. The meeting was attended by about 300 men, some from Kansas and others from nearby towns and cities, Tulsa contributing very substantially to the attendance.

The meeting started with an inspection tour of the newly finished offices and laboratory building of the Experiment Station of the U. S. Bureau of Mines, with Supervising Engineer N. A. C. Smith and his assistants as escorts.

The Reda Pump Co. acted as host at its large plant, which was gone over by the visitors with much interest. Following the inspection tour a dutch lunch was served.

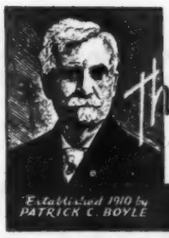
The evening was spent viewing two motion pictures at the Cities Service Co. Men's club. J. S. Warren, general superintendent of the company and vice chairman of the A.P.I. chapter, was chairman. The first picture covering oil operations in Mexico was followed by a motion picture and talk on "Circumferential Welding of Casing" by L. R. Hodell, engineer for Carter Oil Co., Tulsa.

## Eastern District A.P.I. Date Will Be Earlier in April

The dates for the spring meeting of the A.P.I. Eastern District, Division of Production, have been changed from April 28 and 29 to April 14 and 15 in the William Penn Hotel, Pittsburgh, Pa., due to a conflict in making suitable hotel arrangements.

## Stanolind Takes Over Block Of 35,000 Acres in Kansas

Interest in extreme western Kansas was increased the past week when it was reported Stanolind Oil & Gas Co. had taken over a block of 35,000 acres in Greeley County, 20 to 25 miles east of the Colorado line. The block, part of which was assembled by Waldo E. Rennie of Denver and the remainder by Kansas parties, is mostly in Townships 16, 17 and 18, Ranges 39 and 40 west, east of Towner and south of Tribune. It is in line with the company's 15,000-acre block in eastern Kiowa County, Colorado, and extending into Greeley County. Texas Co. and Continental Oil Co. have acreage around the last named block. Extensive seismograph explorations have been made in these areas.




# the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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## Stop Sign

The action of Texas in reducing its crude oil production the equivalent of one-seventh through the Sunday shutdowns may be considered by some as too drastic but every student of the situation knows that drastic steps were necessary, not only to bring production into line with current demand but to offset the previous overproduction, principally in the refining branch.

It would be foolish to attempt to ignore the fact that the industry within the next few weeks will face a situation which calls for emergency remedies such as offered by the order of the Texas Railroad Commission.

Oklahoma has cut its allowable under the Bureau of Mines recommendation and below its own production in December and January, and Kansas has kept in line with the federal estimate. These adjustments, with the possibility of further curtailment by purchasers, recognize the necessity of immediate action.

The industry is confronted with a statistical condition which has been several months in the making. While there have been several contributory complications the outstanding ailment has been the gasoline situation.

For the eight weeks ending January 22, some 12,592,000 barrels of gasoline were added to storage at refineries and major terminals. This addition to motor fuel inventories averaged 225,000 barrels daily, obviously far too large.

Under normal conditions half of this increase would have been sufficient to be in line with seasonal requirements.

Due to the fact that the industry entered December with a heavy inventory it would have been better if not more than 4,000,000 barrels had been added to storage during the 56-day period.

Translated into terms of crude oil run to stills the industry would have been in better shape if refiners had run from 200,000 to 250,000 barrels less daily.

Failure to carry out this needed program of curtailment has resulted in the accumulation of stocks which now total approximately 84,000,000 barrels.

It is evident that this situation cannot be continued indefinitely. Unless runs are curtailed substantially over the next two months the industry will have 95,000,000 or more barrels of gasoline on hand by mid-April.

This dilemma has not been brought about by any unexpected decrease in demand, notwithstanding the statements of calamity shouters. While the final figures will not be available for several weeks there is enough statistical data at hand to indicate that actual gasoline demand in January was the highest on record for that month, by from 5 to 6 per cent.

The demand for distillate oil and kerosene reached new peaks, while decreases in other products, if any, were small.

In other words, the trouble must be charged to the well known tendency in the industry to overproduce during an expanding market. As a consequence, the industry has now not only to curtail in line with current requirements but it has also to make up for overproducing since the latter part of last year.

This can be done without creating a shortage of any product as there is sufficient fuel oil of all grades on hand to supply demands with a smaller current output.

The industry has the machinery to correct this abnormal situation. Texas has not hesitated to act. But neither Texas nor any single section of the oil country can be expected to carry this burden alone.

If some states continue to produce as they have been doing, any prospective benefits from the enlightened action of the other states will be nullified and the entire industry will pay the cost.

# Program for Spring Meeting of A.P.I. Mid-Continent District at Amarillo

The program for the spring meeting of the Mid-Continent district, American Petroleum Institute, Division of Production, to be held at the Herring Hotel, Amarillo, Tex., February 17 and 18, follows:

### Thursday, February 17

10:00 a.m. Chairman: Van D. Bennett, Sunray Oil Co. Co-chairman: Dewey Jordan, Atlantic Refining Co.

Greetings—Ross D. Rogers, mayor, City of Amarillo.

Address of Welcome: Col. E. O. Thompson, Railroad Commission of Texas.

"Vocational Training in the Oil Industry," L. K. Covelle, state supervisor, Trade and Industrial Education, Oklahoma.

"Use of Hydraulic Pumps in Mid-Continent Field," J. F. Crawford, British American Oil Production Co.

1:30 p.m. Chairman: A. J. Holland, Texas Co. Co-chairman: Ira M. King, E. H. Moore Co., Inc.

"Unitization of Leases and Pressure Maintenance," E. O. Bennett, Continental Oil Co.

"The How and Why of Oil Well Shooting," Paul F. Lewis, American Glycerin Co.

"Sulfate-Resisting Cements for Oil-Well Cementing," Svend Rodam, Trinity Portland Cement Co.

Moving pictures in color on "Manufacture of Cement."

### Friday, February 18

9:30 a.m. Chairman: F. W. Floyd, Carter Oil Co. Co-chairman: J. K. Ellis, Transwestern Oil Co.

"Squeeze Cementing for Controlling Gas-Oil Ratios," C. P. Parsons, Halliburton Oil Well Cementing Co.

"Application of Electrical Logging Methods to West Texas Problems," W. J. Gillingham and W. B. Steward, Schlumberger Oil Well Surveying Corp.

"Accident Prevention in the Oil Industry," G. O. Lockwood, Cities Service Oil Co.

Report of nominating committee. Election of district officers and advisory committee.

1:30 p.m. Chairman: M. A. Sherwood, Shell Petroleum Corp. Co-chairman: N. M. Hutchinson, Cities Service Oil Co.

"The Hazardous Use of Old Pressure Vessels in Oil Fields," G. Raymond, Black, Sivalls & Bryson, Inc.

"Modern Trends in Rotary Equipment and Drilling," J. E. Brantly, Drilling & Exploration Co., Inc.

"Practical Methods of Determining Productivity in Reservoirs on Leases by Bottom-Hole Pressures and Core Analysis," W. S. Walls, Phillips Petroleum Co.

## THE MARKETS*

CRUDE OIL: *A substantial reduction in production apparently assured for February due to action of state allocation bodies and proration plans of major pipe line companies has brightened crude market outlook for immediate future. Shutdowns or curtailments by several refining organizations have resulted in more spot crude oil being offered at several points.*

REFINERY: *There are no strong spots in refinery markets. Overhead distillates, which were scarce through the fall and early winter periods, are now freely offered in most areas. Plant curtailments in prospect for February should bring a better balance between supply and demand. Natural gasoline prices lower in the Mid-Continent.*

TANK WAGON AND POSTED DEALER: *Scattered reductions in kerosene and gasoline prices.*

FINANCIAL: *Oil stocks continue decline. Average for 30 stocks for week ending January 29: High, 29.62; low, 27.02; close, 27.25. Week ending January 22: High, 30.52; low, 29.10; close, 29.45.*

**Detailed information in Market Section.*

### Annual Statements

ATLANTIC REFINING *reports earnings of $9,942,000, or $3.51 a share, for year ended December 31 vs. $7,342,197, or $2.59, in preceding year.*

PHILLIPS PETROLEUM'S *1937 earnings are estimated over $24,000,000, or $5.40 a share, vs. $17,875,489. or $4.22 a share, in 1936.*

SUN OIL CO. *and subsidiaries report net income of $9,544,085 in 1937, or $4.17 a share, vs. $7,563,544, or $3.44 a share, in 1936.*

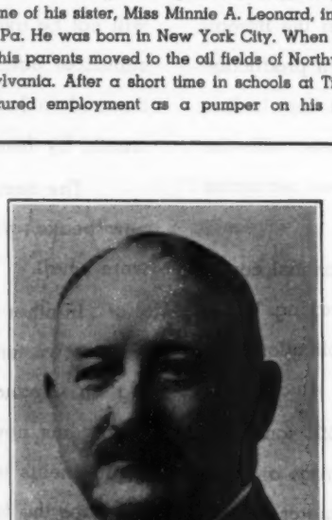
### Historic Blennerhasset Island Leased For Oil Drilling

The leasing of part of Blennerhasset Island for oil drilling was disclosed at Parkersburg, W. Va., by Mrs. Charles Douglas, granddaughter of the late John T. Waite, whose estate controls the plot. She did not give the name of the firm to which the 120-acre tract was leased.

The original Blennerhasset estate is owned by Amos Gordon, retired vice president of Standard Oil Co. of Louisiana. It includes 229 acres and has been restored by Mr. Gordon.

## Obituaries

**JOHN W. LEONARD,** 70, internationally known as a pioneer in oil and gas enterprises, died January 25 at the home of his sister, Miss Minnie A. Leonard, in Washington Pa. He was born in New York City. When he was a boy his parents moved to the oil fields of Northwestern Pennsylvania. After a short time in schools at Titusville he secured employment as a pumper on his father's lease, a short distance from the original Drake well. Soon after, he moved to Bradford, and there obtained knowledge and skill as a practical driller. At the age of 19 he moved to Washington, Pa., where a drilling campaign was getting under way. He soon acquired a string of tools and contracted to drill a well, earning the unique distinction of being the youngest drilling contractor of oil history. After drilling several wells he led a caravan of pioneers into virgin oil fields near Sistersville, W. Va. Later he moved to Ohio, Illinois, Kentucky and even into Canada. Several successful operations in Texas followed. Mr. Leonard was one of the pioneer operators in Mexico from 1908 to 1914, drilling the first oil wells on the Panuco, Tamesi and Tuxpam rivers. He was an incorporator of Mexico Fuel Oil Co. and Penn-Mexico Fuel Oil Co. and an organizer of Tropical Oil Co. now owned by International Petroleum Co. Mr. Leonard drilled the first producing oil well in Colombia in 1917-18. He was president of Leonard Petroleum Co., Leonard Oil & Gas Co. and Leonard Oil Development Co.



*JOHN W. LEONARD*

**JOHN P. WHITEHILL,** 88, retired oil man and the oldest citizen of Chelsea, Okla., died January 27. Born in Pennsylvania, he spent 70 years in the oil business, beginning in his native state and continuing when he moved to Oklahoma in 1905. He retired in 1923 after 17 years as superintendent of the Whitehill leases, owned by a nephew, Howard Whitehill of Tulsa.

**CLARENCE R. WISE,** 43, secretary of the Standard Oil Co. of New Jersey manufacturing committee, died January 21 in Summit, N. J. He was born in Iowa and attended Cornell and the University of Wisconsin. He was a chemistry instructor in the latter for five years before joining the Standard Oil Co. staff.

### Army Aviation Fuel Contracts For Six Months to June 30

WASHINGTON, D. C.—Contracts for aircraft engine fuel for the last six months of the 1938 fiscal year, which ends June 30, involving a total of $1,818,786.37, were awarded by the war department. Among the larger awards were:

Shell Union Oil Corp., New York, for the Middletown air depot, Middletown, Pa.; United States Military Academy, West Point; Phillips field, Aberdeen proving grounds, Md.; army activities at Pittsburgh airport; Pope field, Fort Bragg, N. C.; Bolling field, D. C.; Mitchell field, N. Y.; Miller field, N. Y., and Fort Meade, Md.—$270,733.90.

Standard Oil Co. of New Jersey, for fuel to Langley field, Va.—$197,309.

Humble Oil & Refining Co., Houston, Tex., received the award for Fort Crockett, Galveston, Tex.; Fort Ringgold, Tex., Kelly field, Tex., and Randolph field, Tex.—$143,575.

Shell Oil Co., San Francisco, received the award of supplying Boeing field, Seattle, Wash.; Long Beach. Calif.; Fort Lewis, Wash.; Pearson field, Vancouver Barracks, Wash.; Rockwell air depot, Coronada, Calif.; Hamilton field, Calif.; March field, Calif.; Maher field, subpost of Hamilton field, Calif.; Salt Lake City, Utah; Tucson airdrome, Tucson, Ariz.—$410,852.50.

### Proposed Tax on Fuel Oil Strikes Snag in Committee

WASHINGTON, D. C.—If a tax of 1 cent a gallon on fuel oil, proposed before the ways and means committee, is not recommended by the committee, an attempt will be made on the floor of the house to include it in the new tax bill, Representative J. Harold Flannery of Pennsylvania said.

Mr. Flannery admitted the tax would tend to turn consumption from fuel oil to coal, but contended his main interest was in conservation of oil reserves.

### M. J. Grogan to Represent Independent Refiner Group

M. J. Grogan, president of the Rodessa Oil & Refining Corp., Shreveport, La., at a meeting of independent refiners in Kansas City Monday was appointed to represent the group at a conference of 500 smaller business interests called for this week by President Roosevelt.

# California Inquiry Nearly Completed

By L. P. STOCKMAN

LOS ANGELES, Calif., Jan. 31.—The outcome at Madison has focused attention on California because representatives of the government have been perusing records of California marketers for several weeks to ascertain if there have been any violations of federal statutes on the Pacific Coast.

There is no similarity between marketing conditions on the Pacific Coast and those in the Midwest as there are comparatively few jobbers operating on the West Coast and the tankcar market is practically nil. California marketers, who have meticulously avoided any alliances or acts that could be considered a violation of the Sherman act or other federal and state statutes, threw open their records and ordered employes to render every assistance to the federal representatives investigating marketing activities on the Pacific Coast. This survey is nearing completion but there will probably be no indication of what was found unless evidence is discovered of collusion or unlawful practice in which event the operator would be cited for violation of the consent decree entered in the federal district court of San Francisco in September, 1930.

Marketing conditions on the Pacific Coast today are very different from what they were in 1930 when marketers by the consent decree admitted the existence of a pool arrangement to absorb surplus gasoline. It was simply a misdirected effort on the part of marketers to effect stabilization within California. No secrecy was attached to the plan and its operation was known by everyone in the trade. Its unforeseen indirect influence and ramifications could not have been anticipated. There are no pool operations of any kind in effect in California at present and there have been none since 1930.

This consent decree is the result of an action started February 15, 1930, when representatives of the government filed suit in equity in the federal court at San Francisco against 19 oil companies, including all the major companies and practically all the independent companies engaged in refining and selling gasoline. For several months independents had been selling their surplus gasoline under a contract with Frank R. Long. The contract expressly provided it should cover only gasoline refined and sold in California and was intended and deemed by all contracting parties to be exclusively intrastate. This geographic limitation was specifically written into the contract to preclude interstate movement.

The department of justice placed a different interpretation on the contract, however, and secured indictments against all participants even though the matter was limited to interstate commerce. When the case came to trial in December, 1930, the defendants, having previously discontinued operations under the contract, allowed a consent decree to be entered as the federal charges were so broad in scope no defense was possible.

The government alleging Mr. Long was the agent for the major companies in making these purchases of surplus gasoline, claimed it was a violation of the Sherman act because it enabled major companies to control gasoline shipped in interstate commerce to the Pacific Coast states and thereby fix prices. A conspiracy was claimed and an injunction sought even though operations were kept in the open and devoid of duress.

The suit was eventually settled by the consent decree enjoining continuation of the Long contract and the alleged conspiracy. Independent refiners and marketers were heartily in favor of the Long agreement and shipped more gasoline in interstate commerce during the agreement than they did prior thereto. The price of gasoline to the public was not increased during the agreement and price wars were averted. Shortly after the Long contract was abrogated by court decree the industry was plunged into a ruthless price war which resulted in a loss estimated to exceed $20,000,000 because cancellation of the marketing contract threw the heretofore absorbed surplus on the spot market.

*Pumping well in Midway-Sunset field*

### Present Status

Federal representatives investigating marketing conditions on the Pacific Coast are apparently on a fishing trip but will leave no stone unturned in an effort to find some basis upon which to build a suit. Careful inquiry fails to reveal who instigated the present investigation or what forms the basis of the activity. It may be possible the numerous suits of marketers to force resellers to comply with the California fair trade practice act together with refusal of some marketers to sell to chiselers and price-cutters has been a contributing factor. The consent decree of September, 1930, specifically provides that, "nothing herein contained shall be construed as in any way an adjudication as to the right of any one or more of the corporate defendants to refuse to sell to any dealer gasoline so long as such refusal is not the result of a collective agreement between such corporate defendant or defendants and one or more of the corporate defendants so to refuse to sell to such dealer."

There has been no case of record for several years where any service station operator has been unable to secure an adequate supply of gasoline provided satisfactory credit has been established and ethical marketing practice followed. The so-called black list alleged to have been set up during operation of the National Recovery Act was in reality a mythical whip to force compliance with provisions of the code regulating wages and hours.

The present investigation of the California industry is of special interest in view of the stabilized conditions that have prevailed in the crude and refined oil markets since the U. S. Supreme Court sustained the constitutionality of an Indiana statute identical with the California fair trade practice act. This measure, among other things, provides that manufacturers of a branded article of commerce can legally establish the selling price and specifically prohibits selling of any merchandise below cost. This latter provision has been invoked several times in California during the past year by members of the Retail Petroleum Dealers Association and other marketers and in every instance the complainants have been victorious.

This stability has proved mutually beneficial to producer, refiner and marketer by eliminating gasoline price wars that characterized marketing previous to enactment of the fair trade act. The retail price of gasoline has been as steady as the price of crude oil and this has proved advantageous to the consuming public. The present retail price of first-grade gasoline is lower than retail quotations on January 1, 1929, and substantially below prevailing retail quotations January 1, 1919. It is evident, therefore, that price fixing on the Pacific Coast is nonexistent.

The large demand in the export market for crude and refined oil has been of considerable importance in the present stabilization because the normal domestic demand is substantially below the present daily rate of production. Exports to the Orient in 1937 reached the highest point ever attained and preliminary reports indicate liftings during 1938 will be relatively high. This is particularly true of crude oil but there is a strong possibility exports of diesel and gas oil will be somewhat lower. It is not likely California marketers will move any great quantity of refined oil to the Atlantic seaboard during 1938 although two cargoes of gasoline and two cargoes of furnace oil moved eastward in January, 1938, along with one cargo of gasoline to the Gulf Coast. A total of 4,090,226 bbls. of gasoline, 726,660 bbls. of kerosene, 414,010 bbls. of asphalt, 121,170 bbls. of crude oil and 43,127 bbls. of lubricating oil was moved to the Atlantic seaboard for domestic consumption during 1937.

### Consent Decree

Judge St. Sure of the Federal District Court at San Francisco signed the consent decree which was in the form of a permanent injunction. Under this injunction the defendants were enjoined from: (1) "Carrying on interstate trade and commerce in gasoline manufactured by them in accordance with or pursuant to any understanding or agreement between them to eliminate compe-

tition as to prices of sale of said gasoline; (2) fixing by agreement between said defendants, or any two or more of them, uniform and noncompetitive prices to be charged for said gasoline referred to in paragraph 1 hereof; (3) increasing or decreasing by agreement between said defendants, or any two or more of them, the prices to be charged by them for said gasoline referred to in paragraph 1 hereof; that is to say in the following manner or by the following means, or any of them, or in a manner or by means similar thereto, to wit: (a) By agreement between said defendants, or any two or more of them, to refuse to sell, furnish, transport, supply or deliver said gasoline to any reseller in the Pacific Coast area for the reason that such reseller refuses to sell said gasoline to consumers at the prices so fixed by said defendants, or in fact so refusing pursuant to such agreement; (b) by making representations to any reseller or resellers of said gasoline to the effect that rule 17 of the group two of the national code of practices for marketing refined petroleum products, or any other rule or provision thereof, requires resellers who are not subscribers to said code to post prices at which gasoline shall be sold by them, or requires any resellers to sell gasoline at the prices posted by the companies selling gasoline to them, or any of them, or that failure so to post prices or to sell is a violation of said code, or of any rule or order of the Federal Trade Commission, or any law of the United States whatsoever.

"(c) Collectively agreeing through the medium of the defendant, Frank R. Long, or others, to purchase or in fact purchasing pursuant to any such collective agreement from the defendant independent companies gasoline manufactured by said independent companies on the condition that said independent companies should sell the remainder of the gasoline so manufactured by them at prices so fixed as aforesaid for the purpose of preventing the defendant independent companies from carrying on the manufacture and sale of gasoline in interstate commerce in competition with the defendant major companies, or for the purpose of enabling the defendant major companies to sell the entire amount of gasoline respectively manufactured by them at uniform and noncompetitive prices fixed by them as aforesaid through the Pacific Coast area. (d) By quoting prices or making sales of said gasoline or causing resellers to quote prices or make sales of said gasoline at prices fixed by agreement by any other means or any means similar thereto. (e) By refraining or causing resellers to refrain from quoting prices other than those fixed by agreement by any of the means, or any means similar thereto, or making sales of gasoline at prices other than those so fixed."

### Court Decree

In addition the court also decreed that: "It is also ordered that the agreement referred to in the petition herein between defendant major companies and F. R. Long, and between F. R. Long and the defendant independent companies, be revoked, cancelled and nullified; and that each and all of the defendants be perpetually enjoined from continuing to operate under the said agreements, or any of them. That the corporate defendants, their respective officers, agents, servants, employes and all persons acting on behalf of them, or any of them, be enjoined from aiding, abetting or assisting individually or collectively others to do any of the things which the defendants are hereinbefore restrained from doing and which are also hereinbefore adjudged to be illegal. Nothing in this decree contained is intended to relate to any elimination of competition which may or might result from the fusion or merger or consolidation of any two or more of the corporate defendants, or from the purchase by any of the corporate defendants of all or any part of the property or capital stock of any other corporate defendant or defendants."

The production situation has not become acute in California but will necessitate drastic action if hostilities in the Orient should end abruptly or financial crisis be precipitated in Japan and thus terminate the prevailing abnormal demand in the export market.

Attempts have been made to have California join the interstate compact and there appears to be another attempt under way now. It is believed probable California operators will again turn down the idea. Coincident with this attempt, reports indicate that Governor Merriam is considering the advisability of submitting both control legislation and the tideland problem to the legislature at a special session. In view of past experiences there is little likelihood of California operators joining the interstate compact or agreeing on the advisability of compulsory regulation.

## COMPLICATIONS

*(Continued from Page 18)*

explain that during periods of business recession and consequent unemployment, a large percentage of consumers buys the cheaper grades of motor fuels and oils. The man out of a job, as one marketing executive explains, "feels that he can stand a few knocks in his engine" if he can save 2 or more cents per gallon.

Since the first of this year this situation has brought lower retail prices for all grades of gasoline at several points in the Middle West and Southwest. Price-cutting has been brought into the open with sign "2 cents off" or an open solicitation of commercial account business on that basis.

This is an old story so far as the oil business is concerned. The present one differs only in the fact that retail price declines have been drawn out longer and could have been stopped easily if proper action had been taken. A general lowering of retail prices is assured unless the present curtailment in crude oil production promptly brings about improved conditions in tankcar and posted dealer markets. There is already a demand from dealers for lower dealer prices so that they can regain the gallonage which they lost due largely to their own merchandising policies. If the sellers concerned feel compelled to acquiesce in these demands it unquestionably will be a threat to the continuance of existing crude price schedules.

The foregoing should not be interpreted as evidence that the marketing branch of the industry regrets that it has given up its control of retail station operations. In regard to control of prices to the end of seeing that retail prices are lowered in line with posted dealer and tankcar quotations, one large company has provided for this situation by retaining control of a few stations scattered throughout the state. When the company reduces its wholesale gasoline prices it also lowers the retail prices at these stations. Most of the dealers also reduce their prices although there are points in the state where the dealers of this company are asking one-half cent more for regular and premium grades of gasoline than is charged at the company-owned and -operated stations.

Efforts will be made to correct the obvious weaknesses in the dealer marketing plan. It is certain, however, that there will be no general return to operation by the larger companies so long as the present trends in legislation continue covering social security, chain-store taxes, maximum hours of employment and minimum wages.

Allan Jackson, vice president of the Standard Oil Co. (Indiana), which retired from the retail marketing field two years ago, said last week: "While the dealer marketing plan has not proved a complete success, we are reasonably satisfied with the progress dealers are making in adjusting themselves to their much larger responsibilities under the present set-up. The oil business is intensely competitive and it may take some little time for some dealers to realize the extent to which they must adjust their own operations to these competitive conditions."

## ORDOVICIAN TESTS

*(Continued from Page 13)*

McKee in the H.&G.N. Survey, section 24, Block 9, heads the group of Ordovician drilling wells which present promise of opening producing fields. The Simpson was topped at 4,775 feet, checking several hundred feet higher than production to the north in Sand Hills. Saturation cored and drilled in the Simpson from 5,371-80 feet has yielded several flows by heads during the past week while testing. Following a 45-minute flow of oil, showing 80 per cent oil (43 gravity) and 20 per cent rotary wash water, tubing sanded up and further testing was delayed until packer and perforated liner could be run opposite the caving zone. Testing will continue next week, and it is expected the fourth producing area from the Ordovician of western Texas will be opened.

Stanley A. Thompson No. 1 Elsinor Cattle Co. ranch, another Pecos County wildcat 20 miles south of Fort Stockton, set and cemented 5-inch casing for a test of porous and saturated zones in the Simpson from 7,051-56 and 7,075-83 feet, total depth 7,128 feet. Schlumberger survey showed sufficient porosity and saturation to expect commercial production. Location is in the northeast part of section 53, Block D, G.C.&S.F. Survey.

Floyd C. Dodson No. 1-A Texas American Syndicate, northern Brewster County, topped the Simpson favorably and continues to check quite closely with Magnolia northern Pecos County strike 68 miles to the northeast. Operations here are temporarily suspended at a total depth of 7,062 feet while rig is being repaired.

Moore Brothers Corp. No. 1 Paul Perner, northern Crockett County deep try in the I. & G. N. Survey, is drilling at 8,965 feet in lime and chert.

**TABLE 2—DRILLING REPORT ON WELLS DRILLING TO THE ORDOVICIAN SERIES IN THE SOUTH CENTRAL PART OF THE WEST TEXAS PERMIAN BASIN**

| Index number on accompanying map | County | Well name | Status |
|---|---|---|---|
| 4 | Presidio | L. C. Brite No. 4 fee, G. H. & S. A. Survey | Drilling at 4,410 feet |
| 5 | Brewster | F. C. Dodson No. 1-A Texas American Syndicate, G. H. & S. A. Survey | Repairing rig, 7,062 feet |
| 6 | Crane | Gulf Oil Corp. No. 3 McKnight three miles north of Sand Hills | Coring and testing at 6,250 feet |
| 7 | Pecos | Magnolia Petroleum Co. No. 1-A McKee, H. & G. N. Survey | Total depth 5,294 feet, flowing by heads, testing. |
| 8 | Pecos | Stanley A. Thompson No. 1 Elsinore Cattle Co., G. C. & S. F. Survey | Total depth 7,128 feet, waiting on cement to set 5-inch casing |
| 9 | Pecos | Wilcox Oil & Gas Co. No. 1 Serf, T. & St. L. Survey | Drilling 1,450 feet |
| 10 | Crockett | Moore Brothers No. 1 Perner, I. & G. N. Survey | Drilling at 8,965 feet |
| 11 | Tom Green | Humble Oil & Refining Co. No. 1 Lewis & Wardlow, H. & T. C. Survey | Drilling 4,100 feet |
| 12 | Schleicher | J. M. Cooper No. 2 B. Page, G. H. & S. A. Survey | Shut down 5,004 feet |
| 13 | Schleicher | Tex-Tor Oil Corp. No. 1 Judkins and Spencer, A. & B. Survey | Fishing at 5,452 feet |
| 14 | Sutton | Ordovician Oil Co. No. 1 Evans, 32 miles southeast of Sonora | Drilling 4,100 feet |
| 15 | Edwards | A. P. Carter No. 1 F. D. Sweeten, B. & B. Survey | Drilling at 5,675 feet |
| 16 | Edwards | Lyles & Auld No. 1 Henderson, H. E. & W. T. Survey | Shut down 3,200 feet |
| 17 | Edwards | Richmond Drilling Co. No. 1 Brown, G. W. T. & P. Survey | Drilling 5,549 feet |

# Tomball Blowout Fourth Well Out of Control in District

By NEIL WILLIAMS

HOUSTON, Tex., Jan. 31.—Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Bell, Tomball field, northern Harris County, has joined the succession of wild wells in South Texas, making four wells now out of control in the district.

It blew out at 11:30 o'clock Friday morning, January 28, while operators were coming out of the hole with drill pipe. Bottom of hole is 2,364 feet. With surface casing in the hole, the well has not cratered, and at latest report had not caught fire. It, however, is making a considerable volume of gas, blowing over the top of the derrick. Danger of ignition is imminent.

Work of clearing wreckage, preparatory to attempting capping, was started immediately. Unless the well craters by blowing out around the surface pipe, little trouble is anticipated in capping the well.

Other wells in the district out of control are Davenport and others Nos. 1 and 1-A Swallow (considered jointly), La Blanca field, Hidalgo County; Texon Drilling Co. No. 2 Clara Driscoll Sevier, Sullivan pool, Nueces County; and National Oil Development Co. No. 1 Railroad, Greta field, Refugio County.

The La Blanca wells blew out two weeks ago. The original blowout occurred in No. 1 Swallow, an abandoned hole, drilled to an approximate depth of 7,800 feet. After blowing out the gas ignited and the heat melted the connections of No. 1-A, a producing well 100 feet away. The first well cratered immediately and quickly engulfed the adjoining producer, and both wells now are blowing from the same crater.

Killing this blowout presents a serious problem, and the Railroad Commission has called a hearing for February 3 to consider what steps should be taken. The other seven wells in the field, which prior to the blowouts had been shut in because of high gas-oil ratios, are being allowed to produce, under special orders, up to 25 per cent of their open potentials as a means of relieving pressure from the blowouts.

The Texon blowout in the Sullivan pool has been out of control since November 9, 1936. For some time it has been making only a small amount of gas and now is about dead. This well created one of the most disastrous blowout situations on the Gulf Coast. At one time there were six active blowout craters within a radius of a quarter mile. The well blew out while drilling at a total depth of 6,834 feet, the gas presumably coming from a sand passed around 6,300 feet. The gas, channeling behind the surface casing, broke through the surface, first in the mud pit, forming a crater which quickly spread to the well, swallowing the derrick, rig and rack of 7-inch casing.

Next, the gas charging shallow sands broke through the surface at two other points, each about 250 feet distant in opposite directions, forming additional craters, and later at a point about 1,000 feet southwest. A producing well, No. 1 Elliff, 933 feet southwest of the original blowout, next fell victim when gas from the shallow charged sands broke out around the outside of the casing, cratering the surface formations and breaking off the connections. An abandoned, shallow water well, about 1,500 feet northwest, became the sixth crater.

*Amerada and Stanolind No. 1 Bell, Tomball*

A dike was thrown up around the crater area, more than 75 acres in extent, to retain water and mud produced by the craters.

A directional relief well, 800 feet north 2 degrees east of the original blowout well, was drilled, and water and mud were pumped into the sand over a long period without successful results. At times the craters would become almost inactive but then burst out again.

The Greta blowout will be two years old next May. With the well on the right of way of the Missouri Pacific Railroad, the crater, formed when the well blew out while drilling below 4,000 feet, spread to the railroad tracks on one side, and the paralleling Houston-Refugio concrete highway on the other. A relief well, north of the crater on the right of way, was drilled but proved unsuccessful in killing the blowout well. Operators are uncertain as to the sand from which the well blew out, although it is indicated the main producing sand is not affected. The crater now is producing heads of salt water with very little gas.

Among the more recent blowouts in South Texas was Sun Oil Co. No. 1 Bayshore farms, Palacios field, Matagorda County. This well, which blew out January 4, was capped successfully January 9. As the hole was cased the well did not crater. However, pressures estimated from 5,000 to 5,500 pounds had to be combated in controlling this well, which blew out while pipe was being pulled after making a drill stem test through casing perforations at 9,245-55 feet. It now is on production with pressure being bled off, although tubing has not been run and the well has not been completed. Pressure has dropped to around 2,000 pounds.

Nome, Jefferson County, is another field in which a blowout has occurred within the past several months. There a well drilled by Shell Petroleum Corp. blew out and cratered, and ignited after being struck by lightning. It was killed by a directionally drilled relief well.

Development in South Texas has been marked by a succession of blowouts. High pressures encountered present a constant hazard in drilling, and the loose, unconsolidated surface formations are readily conducive to cratering in uncased holes. Particularly notorious have been cratered blowouts at such fields as Conroe, Refugio, Greta, Silsbee and several others.

# Natural Gas News

### Pennsylvania Companies Cited To Hearing in Pittsburgh

HARRISBURG, Pa.—Hearings for eight natural gas companies ordered by the Public Utility Commission to show their rates were reasonable have been scheduled for February 10 and 11 at 10 a.m., in Pittsburgh. The companies and their location follow:

February 10—Fidelity Gas Co., Aliquippa, Beaver County; Laughner Oil & Gas Co., Pittsburgh, serving portions of Allegheny and Beaver counties; Saxonburg Heat & Light Co., Saxonburg, Butler County; Westmoreland Gas Co., Jeannette, Westmoreland County.

February 11—McCullough Gas Co., Chicora, serving portions of Armstrong and Butler counties; Turner Gas & Oil Co., Bruin, Butler County; Cadogan Gas Co., Kittanning, Armstrong County; State Line Gas Co., Fairmont, W. Va., serving a portion of Fayette and Greene counties.

### Bureau of Mines Statistics on Natural Gas Production

The marketed production of natural gas in 1936 reached a new peak of 2,167,802,000,000 feet according to the Bureau of Mines. This total represented a gain of 13 per cent over the 1935 figure and 12 per cent over the previous record of 1930 (1,943,421,000,000 feet). Exports of natural gas amounted to 7,436,000,000 feet, of which Canada received 84,000,000 feet, and Mexico 7,352,000,000 feet. Imports were 152,000,000 feet piped from Canada. All three foreign-trade items represented gains over 1935.

The consumption of natural gas in the United States was 2,160,518,000,000 feet, compared with 1,909,901,000,000 feet consumed in 1935. The largest gain over 1935 was a 19 per cent increase in gas used for general industrial purposes. Consumption in the manufacture of carbon black increased 17 per cent, while that used for domestic and commercial purposes increased 10 per cent.

The value of natural gas at the wells continued the downward trend begun in 1929, averaging 5.5 cents in 1936 compared with 5.8 cents in 1935 and 6 cents in 1934. This average continued to be dominated by the large volumes of cheap residue gas from natural gasoline plants in California, Oklahoma, and Texas, but it is noteworthy that well values decreased in the eastern states, where they are relatively high. The average price paid by domestic and commercial consumers was 67.1 cents, or 1.4 cents under the average in 1935. This was the largest decline in this item ever recorded. The value of gas used for industrial purposes, other than for field use and the manufacture of carbon black, increased slightly, averaging 17.2 cents in 1936, compared with 16.9 cents in 1935.

Of the 2,160,518,000,000 feet consumed in 1936, 618,468,000,000 feet (29 per cent) was used for field purposes; 343,346,000,000 feet (16 per cent) was used by domestic consumers; 111,623,000,000 feet (5 per cent) was used by commercial consumers; 283,421,000,000 feet (13 per cent) was consumed in the manufacture of carbon black; 156,080,000,000 feet (7 per cent) was consumed at electric public-utility power plants; 93,183,000,000 feet (4 per cent) was consumed at petroleum refineries; and 36,923,000,000 feet (2 per cent) was consumed at portland cement plants, leaving 517,474,000,000 feet (24 per cent) consumed for other industrial purposes. Compared with 1935, these data reflect chiefly gains in industrial use at the expense of consumption in homes and in the oil and gas fields.

The number of domestic and commercial consumers (meters) of natural gas in 1936 was 8,674,000, compared with 8,004,000 in 1935. Of these consumers, 2,752,690 used mixed gas in 1935, compared with 2,356,760 in 1935. A large decrease in consumers in Indiana was more than offset by the consumers of two new companies in Michigan.

There were 53,960 producing gas wells at the close of 1936, compared with 53,790 at the close of 1935. The number of gas wells completed rose to 2,070 in 1936 from 1,401 in 1935. Indicated abandonments increased, rising from 1,741 in 1935 to 1,900 in 1936.

The total interstate (and export) movement of natural gas in 1936 rose to 574,342,000,000 feet, 22 per cent over the 1935 figure of 468,944,000,000 feet. This gain was due both to increases in the established movements and to the expansion of the pipe line systems into additional states.

### Gas Industry First Exhibitor At New York World Fair

W. E. Derwent, vice president, George D. Roper Corp., Rockford, Ill., was elected a member of the board of directors of the Association of Gas Appliance and Equipment Manufacturers at their regular meeting January 25, at which Merrill N. Davis, president of the association, and executive vice president of S. R. Dresser Manufacturing Co., of Bradford, Pa., presided.

W. T. Rasch, vice president of Gas Exhibits, Inc., and president of American Gas Products Corp., New York, reported the gas industry had the privilege of being the first industrial and private exhibitor to break ground at the New York 1939 World Fair, and that the laying of the foundation for the $750,000 building to house the industry's exhibit was rapidly progressing.

The association is a cooperative enterprise of several hundred manufacturers formed more than two years ago to stimulate sales and promote the gas industry generally.

### Oklahoma Utilities Convention At Oklahoma City in March

Officers, directors and chairmen of the Oklahoma Utilities Association for the year 1938, elected by the executive committee at its recent meeting, follow:

President, J. Y. Wheeler, Oklahoma manager, Community Natural Gas Co., Denison, Tex.; first vice president, Glenn C. Kiley, manager Western Division, Oklahoma Gas & Electric Co., Oklahoma City; second vice president, W. Jennings Young, vice president, Oklahoma Natural Gas Co., Tulsa; secretary-treasurer, W. R. Emerson, vice president and treasurer, Oklahoma Gas & Electric Co.; acting secretary, Miss Kate A. Niblack; directors, J. Y. Wheeler, Glenn C. Kiley, W. R. Emerson, J. P. Arnold, Public Service Co. of Oklahoma, Tulsa; C. A. Breitung, vice president, Southwest Natural Gas Co., Ada, Okla.; S. I. McElhoes, vice president, Southwestern Light & Power Co., Chickasha, Okla.; Fred W. Insull, president, Public Service Co. of Oklahoma, Tulsa; W. L. Woodward, president, Zenith Gas System, Inc., Alva, Okla.

Other board members serving through 1938 are: W. Jennings Young, R. W. McClure, president, Oklahoma Power & Water Co., Sand Springs, Okla.; A. F. Potter, manager, Bartlesville Gas & Electric Co., Bartlesville, Okla.; J. F. Owens, president, Oklahoma Gas & Electric Co., Oklahoma City.

R. W. McClure is chairman of the Electric Division; W. L. Woodward is chairman of the Gas Division, and Glenn C. Kiley is convention chairman, the convention to be held at the Biltmore Hotel, Oklahoma City, March 21 and 22.

### Gas Measurement Short Course At Norman, April 19 to 21

At a meeting of the general committee of the Southwestern Gas Measurement Short Course held in Norman, Okla., the dates of April 19, 20 and 21, 1938, were set for the short course this year, which will be held at the University of Oklahoma, Norman.

### New Hearing on Gas Rates for Oklahoma Communities

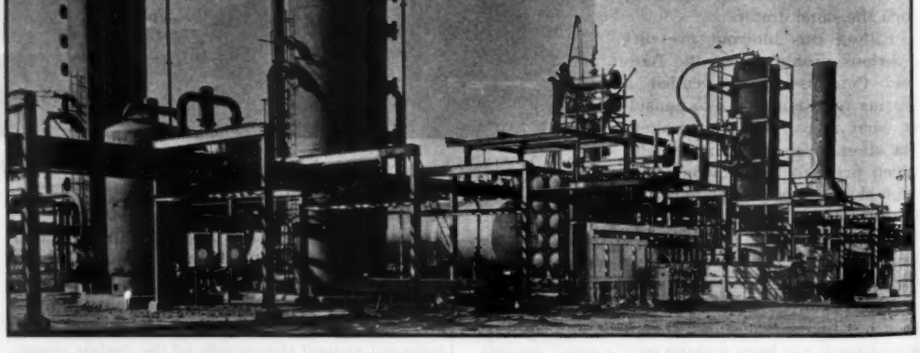
A new rate hearing for the 26 southwestern Oklahoma communities served by the Community Natural Gas Co. and its parent firm, Lone Star Gas Co. are being discussed by members of the Oklahoma corporation commission following state supreme court action in reversing the commission's order for a reduced rate.

Reford Bond, chairman of the commission, said an entirely new rate hearing probably would have to be ordered.

The court vacated an order rebating $168,901 to

# Natural Gasoline

## PHILLIPS COMPLETES NEW PLANT IN ECTOR COUNTY, WEST TEXAS



Extraction and cooling equipment in Phillips Petroleum Co.'s 60,000,000-foot gasoline plant in the Goldsmith field of Ector County, Texas, which was recently placed in operation. Residue gas from this plant is being piped through a 4-inch line to its plant in the Judkins field. Here additional steps are taken to stabilize the light ends of the residue gas in the manufacture of polymer gasoline.

consumers. The case has been pending since December, 1930. The commission ordered a reduction of 10 cents per thousand feet at the gate where Lone Star delivered to Community Natural and a corresponding reduction in the burner tip rate.

# Refinery Projects

### Southwest Texas Refinery to Be Placed in Operation

HOUSTON, Tex.—Operation of Eggleston Oil Products Co.'s refinery at Three Rivers, Live Oak County, Tex., is expected to begin about February 10. The refinery consists of a 3,000-bbl. skimming plant and a 1,500-bbl. vacuum unit, and will process crude largely from the Ezzell pool. It will also process some crude from the Callihan and Jacobs pools. The Ezzell pool, in McMullen County, was discovered in June, 1937, and at present is producing about 1,700 bbls. daily.

### Permanent Officers Elected By Michigan Oil Refiners

ALMA, Mich.—Permanent officers of the Michigan Oil Refiners Association were elected by its 10 refiner members at a meeting held here last week. Officers elected included: President, B. J. Skinner, president of Midwest Refineries, Inc.; vice president, D. E. Foster of McClanahan Refineries, Inc.; and treasurer, Reid Brazell of Leonard Refineries, Inc. Herman Berg is the association's full-time traffic manager and secretary. Offices of the group, which was formed about six months ago, will be in the State Savings Bank Building, Alma.

### Richfield Oil Corp. to Revamp Watson Distillation Unit

LOS ANGELES, Calif. — Involving an expenditure of approximately $200,000, Richfield Oil Corp. shortly will begin complete modernization of its present crude distillation unit at Watson, Calif. Contract for the work was let early this week. Although not a part of the new refinery now under construction for Richfield, this work was provided for under the original major contract which contemplated the expenditure of roughly $5,000,000 for construction of the new refinery and for certain additions and improvements to the existing refinery.

When completed, the improvements to be installed in the unit will enable the company to obtain a complete group of products without the necessity of rerunning the oil as at present. Capacity will be from 14,000 to 19,000 bbls. of crude oil daily, depending upon the type of crude being run.

### New Equipment to Be Installed At Two California Plants

LOS ANGELES.—Pacific Gas & Electric Co. has allocated $10,000,000 to cover construction costs of two new 44,000-kilowatt steam electric plants at the Avon refinery of Tide Water Associated Oil Co. and at Martinez refinery of Shell Oil Co. The two installations scheduled for completion late in 1938 will utilize surplus steam and residual gas resulting from refinery operations at both Avon and Martinez refineries. Operation of these steam electric plants will greatly enhance operating efficiency at Avon and Martinez by using a combustible gas which is at present being burned in torches as blown to the air.

### Wyoming Refinery Acquired By Husky Refining Co.

DENVER, Colo.—The Husky Refining Co., incorporated with a capital of 7,500 shares of common stock and 2,500 shares of 6 per cent cumulative preferred stock, both of $100 par value, has acquired the Park Refining Co., which constructed a 2,000-bbl. skimming plant at Cody in 1936 to run on Oregon Basin crude, and the Cody Petroleum Co., which has production in the Oregon Basin field. The directors of the new company are Glenn E. Nielson, of Cody; W. W. Lindsey, of Billings, Mont., and Meyer Rankin, a Cody attorney. The Cody plant was built by C. W. Hart, Missoula, Mont., former head of the Hart-Parr Tractor Co., at a cost of $400,000, who sold the property to V. M. Kirk and associates, in October, 1936. The Cody Petroleum Co. was one of the pioneers in the Oregon Basin field when it was brought into production.

### Cushing Refining Shuts Down Blackwell, Okla., Plant

Cushing Refining & Gasoline Co. has announced that it is permanently closing its refinery at Blackwell, Okla., and will salvage the plant and pipe lines in that area. Capacity of the plant is 1,700 bbls. daily, but for the past two years daily schedules have been maintained near the 800-bbl. mark. The crude takings of the company will not be reduced by the closing of the plant since its Cushing plant has sufficient capacity to care for the crude formerly run to both plants.

### Allowable Production is Set For Otis Field in Kansas

Allowable production of gas in the Otis field of Rush and Barton counties for February was set at 1,170,000,000 feet daily, E. G. Dahlgren, conservation director of the Kansas Corporation Commission, announced. The 57 gas wells in the field have total potential of 1,657,292,000 feet daily. One-fourth of the allowable is derived from open flow potential and the remainder is based on acreage times pressure factor, in compliance with commission regulations.

# Pipe Line Activity

*Snow and cold did not halt work on new line of Bay Pipe Line Co. from the Buckeye field to Saginaw, Mich., to be completed March 1*

### Oklahoma Pipe Line to Lay 21-Mile Loop Near Ardmore

Approximately 21 miles of 8-inch pipe is to be laid by Oklahoma Pipe Line Co. to fill a gap in a loop of one of its Carter County lines, north of Ardmore, Okla., awarding of the contract having been announced this week. The line will be oxyacetylene welded by the lindeweld method.

### Hidalgo Laying Gas Line From Santo Domingo Field

HOUSTON, Tex.—Construction of a 6-mile gas line from the Santo Domingo gas area in southeastern Starr County to the western terminus of the Hidalgo Gas Co. commercial Samfordyce line has been started, Frank McCarthy, general manager for the company, reports.

The line will connect with the company's Samfordyce supply and will form a reserve for commercial consumers in McAllen and Mission as well as providing additional gas for jetting oil wells in the Samfordyce field.

The line will be of 4-, 5- and 6-inch sections and all-welded construction.

### Patton Completes Construction Of Line From Rotan Field

FORT WORTH, Tex.—T. E. Patton, who recently moved his Post refinery to Rotan to take crude from the Rotan field, has completed construction of a 3-mile pipe line to the new Fisher County area—first since Shell's trunk line discontinued connections with Tidal's outlet last fall.

Mr. Patton completed the 2-inch line at a cost of approximately $4,000, connecting it with Sunray Oil Co. 50,000-bbl. battery of tanks on the Joe Robinson 160-acre lease.

The refinery has been trucking crude from Sunray's seven wells since the first of the year. The plant has a daily capacity of about 700 to 800 bbls. and is contracted with Sunray for that company's entire output.

# INTERNATIONAL NEWS

## Oil Companies Have Posted Bond Awaiting Mexican Court Rule

By posting bond of 3,000,000 pesos with the National Bank of Mexico last week, the 16 United States and British oil companies engaged in a wage dispute with oil field labor syndicates and the Labor Board in Mexico postponed an earlier order for immediate institution of the higher pay scale. The dispute now awaits decision of the Mexican Supreme Court on an appeal by the companies. The bond has no effect on the demand that the companies pay wages for the strike period in June, 1937, and this remains to be settled.

There was no indication when the Supreme Court will issue a decision on the appeal by the companies seeking arrest of the Labor Board's order of December 18 which instructed the companies to pay an increased wage rate amounting to approximately 33⅓ per cent above the previous scale.

The impression is abroad in Mexico that the Labor Board, syndicates and President Cardenas' administration realize they have overplayed their hands in the present dispute and have accepted the Supreme Court route as a matter of saving face. Some observers anticipate the Supreme Court will modify the earlier orders in drastic fashion, temporarily easing the threat of withdrawal from the country by oil companies which, through taxes on production and wage expenditures, supply much needed capital in the scheme of Mexican fiscal policies.

## Rumanian Petroleum Reserves Factor in European Politics

Rumanian political developments are viewed in Europe as placing a highly important aspect upon that nation's petroleum reserves, the most extensive in Europe outside the U.S.S.R. The forces of international facism are developing a vigorous offensive to secure control for Italy and Germany of Rumania's supplies of oil, in the opinion of G. E. R. Gedye, central European correspondent for the New York Times, who reviewed trends in the first of a series of articles last week.

"The issue of control of Rumania's oil and grain transfers the European danger point from Central Europe and the Mediterranean to Rumania. For centuries," writes Mr. Gedye, "the vast potential wealth of the sparsely populated territory included today in Rumania tempted the rulers of overpopulated Germany. If this wealth now falls under Germany's control it will put at her disposal sinews of war in the shape of those reserves, the lack of which, both Germany's friends and enemies agree, is one of the most potent factors against an early outbreak of a general European war.

"The whole strategy of Czechoslovakia and Rumania hitherto has been based on denying the German general staff access to Rumanian oil fields. Now there is a prospect that this missing link in Germany's war machine—oil and food reserves—is being placed in her hands without fighting."

In view of the bitter feeling between Germany and Soviet Russia, there is question whether the U.S.S.R. will sit quietly by and permit Germany to obtain control of Rumania's oil reserves.

Germany has been struggling for several years to obtain its oil requirements from Rumania, but early in 1937, before the current Rumanian political developments, shipments to Germany were seriously restricted because of the Reich's inability to pay in strong currency. Germany was also practicing resale policies with Rumanian petroleum, the medium for replenishing its supply of strong currency, while paying for the products with farm implements.

The oil industry itself in Rumania is in a weakened position because of the regulations in recent years with relation to acquisition of new property by the operating companies. So restricted have been the companies they have been compelled to be content with drilling locations near proven fields. Furthermore, the currency regulations imposed by the Rumanian government, including requirement that practically all strong money is passed first to the national bank and then paid in national tender, have greatly restricted purchase of modern equipment and use of scientific methods of exploring for new fields. The accumulation of events presents the possibility that oil, lifeblood of armies and navies, may place Rumania in a squeeze play between Soviet and Germany which might precipitate a serious conflict.

## Austrian Government Checking Its Oil Refining Facilities

With domestic production climbing from 57,355 bbls. for the first 10 months of 1936 to a new record of 200,910 bbls. for the same period in 1937, the Austrian government is giving consideration to expansion of its refining facilities.

Despite the increase in production, Austria is still deficient in crude oil to the extent of more than 6,000 bbls. per day. The country is currently producing about 900 to 950 bbls. per day whereas requirements run approximately 7,000 bbls. per day.

The Austrian government has launched negotiations with large refining units seeking construction of a cracking plant within the country to serve the War Ministry with high quality motor fuel. In view of the limited crude oil supply, efforts are being made to make arrangements for duty-free importation of crude oil before refining companies will consider expenditure involved in erecting a modern cracking unit.

## California-Texas Co., Ltd., in India on Aggressive Scale

Active competition for the markets of India, announced during the middle of 1937 as a project of the California-Texas Oil Co., Ltd., is being launched on a broad and aggressive scale.

First shipments of kerosene and gasoline from Bahrein Island were recently discharged at Bombay. Storage tanks with a combined capacity of about 60,000 bbls. of gasoline and 100,000 bbls. of kerosene have been built at Sewri and Wadala (near Bombay) and arrangements to distribute bunker oil, diesel oil, fuel oil, and other products have been completed. The sale of Bahrein gasoline will be started in Calcutta and Karachi in February and in Madras in March.

Arrangements are being made to place tanks throughout India and, in addition, eight ocean terminals with a combined capacity of 25,670,000 gallons and four can factories capable of producing 11,000,000 cans annually are under construction. An extensive nationwide network of service stations is being developed as rapidly as possible.

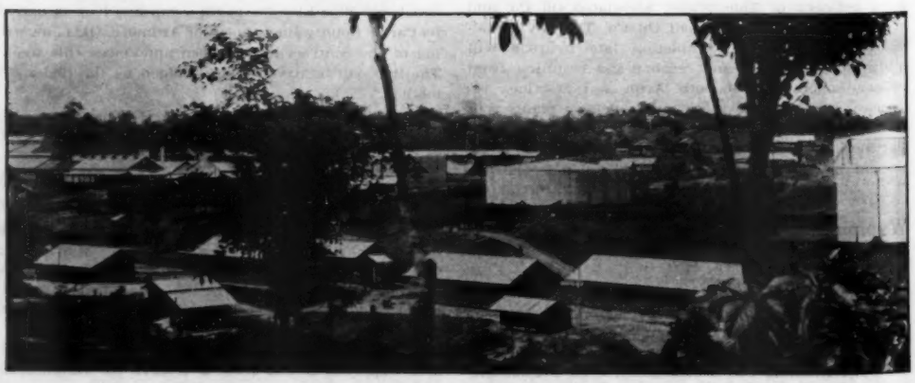
The true significance of invasion of the Indian market by California-Texas Oil Co. is found in the sources of production by the new concern and the older companies which rely entirely on internal crude oil. Due to the depth and age of hundreds of wells in India the expense of producing the oil within the country is much greater than on Bahrein Island where all, excepting one or two of the completed wells, are capable of flowing under their own pressure at rates materially exceeding current requirements.

Furthermore, the successful exploration of producing horizons below that currently drawn upon on Bahrein Island gives promise that inexpensive crude oil will be available from that source for an indefinite period.

## Transfer of Operating Men Indicates Barco Development

Transfer of at least three key men from Texas Co. domestic operating personnel to positions with wholly or partially controlled subsidiaries in Colombia gives further evidence of the intensive development program planned in the Barco concession and other Colombian territories in 1938. C. B. Williams, of Fort Worth, Tex., formerly assistant division manager of the West Texas and New Mexico division, has been transferred to Cucuta, Colombia, as manager of Colombian Petroleum Co. producing operations on the Barco concession. J. K. Hufendick of Wink, Tex., will accompany Mr. Williams to Cucuta as field superintendent. W. V. Vietti of Houston, Tex., chief engineer in the South Texas division, had been transferred to Colombia as resident manager for Texas Petroleum Co., wholly owned subsidiary of Texas Corp.

Since acquiring control of Colombian Petroleum Co., Texas Corp. and Socony-Vacuum have been engaged in preparations for exploitation of the Barco concession in construction of field roads, camp facilities and in assembling necessary material. Recently, an order was placed with two of this country's steel mills for approximately 250 miles of 12¾-inch line pipe which will be used in construction of a line from the Barco concession to a Colombian port on the northern coast. While the pipe line project has not received official confirmation from Colombian Petroleum or the parent companies, the inquiries placed with manufacturers of fittings and pipe have left no doubt the material is intended for Colombia. Prior to placing the order for the larger pipe, Colombian Petroleum delivered approximately 25,000 tons of line pipe to the Barco concession for gathering service.



*Typical oil field scene in the El Centro field in Colombia, South America*

# ENGINEERING and OPERATING

## In This Issue


**THE PETROLEUM WAXES—THEIR PROPERTIES AND COMMERCIAL USES**
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Although the first important commercial application of paraffin wax was in the manufacture of candles, today the amount of wax consumed in manufacturing paper and allied products greatly exceeds this use. Due to its resistance to the passage of moisture vapor and ease of application, wax has found many important commercial uses. Here, the author discusses properties of various petroleum waxes, such as crystallization, transparency and water vapor resistance.

**DRILLING IN WILMINGTON HARBOR AREA OFFERS UNUSUAL PROBLEMS**
*By A. A. Carrey* ..... *Page 37*

Some 200 wells have been drilled in the Wilmington field of California, of which a great many lie within the city limits of Long Beach. Therefore to reduce the danger of blowouts and fires and to prevent damage that might hinder shipping activities, development of the field has taken place under somewhat unusual conditions. Drilling and production practices employed are described and geological data given on the three producing formations present.

**PREPARATIONS MADE FOR MINING OIL FROM CALIFORNIA DEPOSIT**
*By T. P. Sanders* ..... *Page 40*

Under present conditions mining of oil from subsurface deposits in the United States is not economically successful due to the abundance of oil that can be recovered more cheaply by drilling. Near Santa Maria, Calif., however, plans for mining a surface deposit of diatomaceous earth impregnated with oil are under way and a large sized plant is planned to be built. Results with an experimental plant indicate that about 64 gallons of oil per ton of ore can be recovered.

**RESISTANCE OF SEAMLESS DRILL PIPE AGAINST COLLAPSING PRESSURE**
*By F. G. Tebenszky* ..... *Page 42*

In present-day deep-well drilling operations tubular materials are required to successfully withstand great stresses and pressures. Here the author discusses the external pressures exerted on drill pipe by the surrounding water column. Formulas and charts for estimating the critical external pressure are given and also for determining the wall thickness of pipe that will withstand a known external pressure.

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# PETROLEUM W

## Their Properties and Va

By FRED W. PADGETT
Research Chemist and Engineer, Moore & Munger

THE first important commercial application of paraffin wax was in the manufacture of candles. Even now the word wax is associated with candle very much as gasoline is connected with automobile. At the present time, however, in this country, more wax goes into paper and allied products than into candles. Although no one will deny that wax is a good and cheap substance for the manufacture of candles, the fact not generally appreciated is that hydrocarbon wax resists the passage of moisture vapor about the best of all the low-priced organic substances. This property of moisture vapor resistance, combined wtih its ease of application as an impregnating and coating material for paper and cardboard, its low fire hazard, stability, and high gloss obtainable merely by chilling the molten film rapidly, render it an important commercial article in an age when the control of moisture content of foods and other products is desirable and necessary. Not only are products protected in waxed paper or cardboard packages, but often may be dipped in the wax directly, sprayed or treated with wax emulsions to leave a thin surface coating which is surprisingly effective in reducing moisture loss.

The commercial advent of paraffin wax occurred in the British Isles about the middle of the past century. The product was extracted from Burmah petroleum about this time and some of it even shipped to America. James Young was granted a patent in 1850 for securing wax and oil from pyrobituminous shale and this early Scotch chemist usually is credited with being the father of the petroleum refining industry because of his pioneer researches in bitumenology and his aid in establishing the Scottish shale oil industry. It may be mentioned in passing that destructive distillation of pyrobitumenous shale to produce oil from which wax is recovered, still is practiced commercially in Scotland.

When the production of crude petroleum began on a large scale in Pennsylvania in the early 1860's, coal carbonization plants then existing in the United States primarily to produce illuminating oil (coal oil), were abandoned or transformed into petroleum refineries. Thus the development of petroleum refining began, and since the Pennsylvania oil was of "paraffin base," wax was one of the products due to be manufactured and in fact did appear commercially prior to 1870.

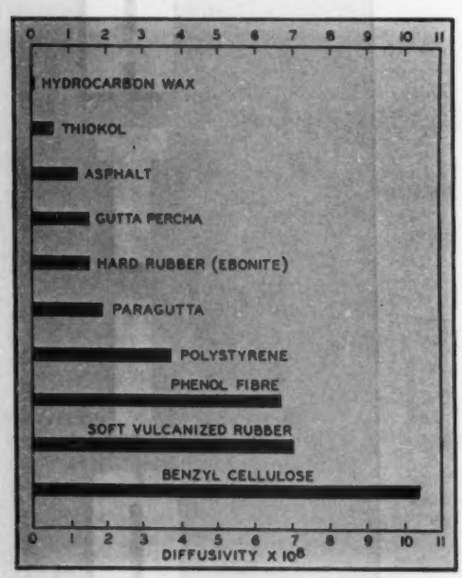



*Fig. 1—Moisture vapor permeability of various insulating media. (Herrman, Bell Telephone Record, 13, 1934.) That of cellulose acetate, if plotted on this chart, would appear as a bar extending to 160*

### Manufacture of Petroleum Waxes

Paraffin wax is a by-product from a phase of petroleum refining where lubricating oils is the primary objective. The conventional method of wax recovery, wherein sweating is utilized, can be described as follows: A nonviscous, lubricating oil fraction from the stills is chilled, at an overall rate of about 1° F. per minute, causing the wax to precipitate in well formed crystals provided the oil has been properly fractionated. The wax and oil slurry then is filtered and pressed, whereupon the wax-free oil flows away and a cake remains in the press consisting of wax mixed with 30 to 50 per cent oil. This cake generally is known as slack wax. The next important step is to subject the slack wax to sweating in order to separate most of the oil and produce waxes of various grades. The sweating involves fractional fusion, drainage of oil from the interstices between the crystals, and solubility effects by the oil and lower melting waxes. In practice a body of the molten wax 6 to 12 inches in depth is permitted to solidify over water. The water is withdrawn leaving the slack wax resting on horizontal coils of 1-inch pipe and a screen or perforated plate. The temperature of the room is raised gradually and water of gradually increasing temperature is circulated through the pipes with the result that oil and lower melting waxes flow away leaving a product on the screen of low oil content, known as crude scale wax. If fully refined wax is to be manufactured, the products secured in the initial operation must be resweated in order to reduce the oil content of the wax to negligible proportions. Also a treatment with sulfuric acid followed by neutralization, is standard procedure in making fully refined waxes because the product must be stable and practically odorless and colorless. This acid treatment may be applied to the slack wax before sweating or to the wax after sweating. Scale wax usually does not have an acid treatment but is percolated through fullers earth; fully refined wax also is percolated through fullers earth or bone char as the last stage in the operation.

The plastic or amorphous waxes have appeared more recently. These products are made from stocks, and by methods radically different from those used where sweating is concerned.

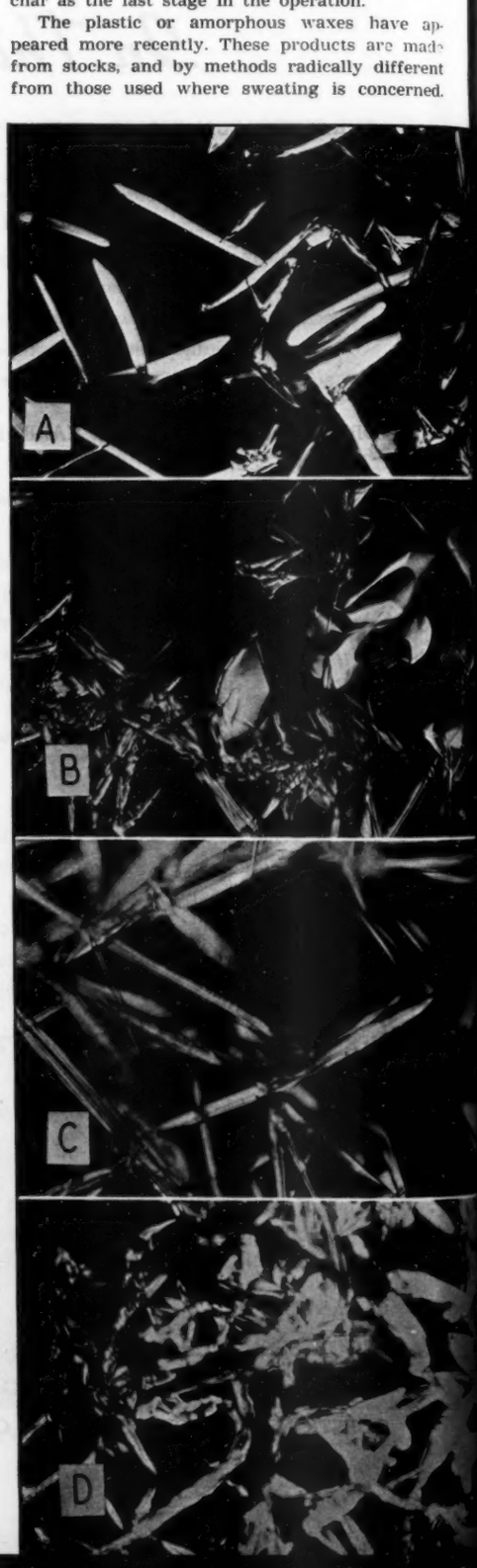



*Fig. 3—Photomicrographs of waxes of commerce, partially crystallized. (A) Scale wax, 122° F. melting point; (B) semirefined wax at 122° F. melting point; (C) fully refined wax at 122° F. melting point; (D) fully refined wax at 132° F. melting point. Magnification, 100-X*

# WAXES

## Various Uses

The stocks are known as petrolatums, being the waxy by-products secured in the solvent dewaxing of viscous residual and distillate oils. The petrolatum stocks are sticky, amorphous, and not amenable to the sweating process; they also contain 20 to 60 per cent oil. The method of recovering the wax is to dissolve the stock in solvent, chill to precipitate the wax, and then centrifuge to separate the wax from the solution; or as in the newer developments, to use a filter such as the rotating type. Several repetitions of the above operations may be necessary in order to secure a product of the desired consistency or freedom from oil.

The scale and fully refined waxes are the ones used in commerce and arts in the greatest quantities. Besides the two main classes mentioned above there is a type designated as semirefined, which is intermediate in oil content between the scale and fully refined varieties. Then there are the plastic or amorphous waxes which are given trade names like Cerese wax, Petrowax, Superla, Syncera, etc. Ceresine and Ozokerite, while not made from petroleum in the usual sense of the word, never the less are hydrocarbon waxes of mineral origin and hence can be placed in the same category as the petroleum waxes.

The difference between the scale waxes and the fully refined waxes depend upon variations of oil content and chemical treatment. The scale waxes contain 1 to 2 per cent oil, or even more, while the fully refined waxes have been sweated to the point that the oil content is practically negligible. The scale waxes are crumbly and lacking in toughness and tensile strength; they also possess some degree of odor and taste. On the other hand the fully refined waxes are more coherent and possess tensile strengths above 200 pounds to the square inch at 70° F.; they are practically free from odor and taste, colorless, and are more stable than the scale waxes. While it is thus to be observed that the fully refined waxes

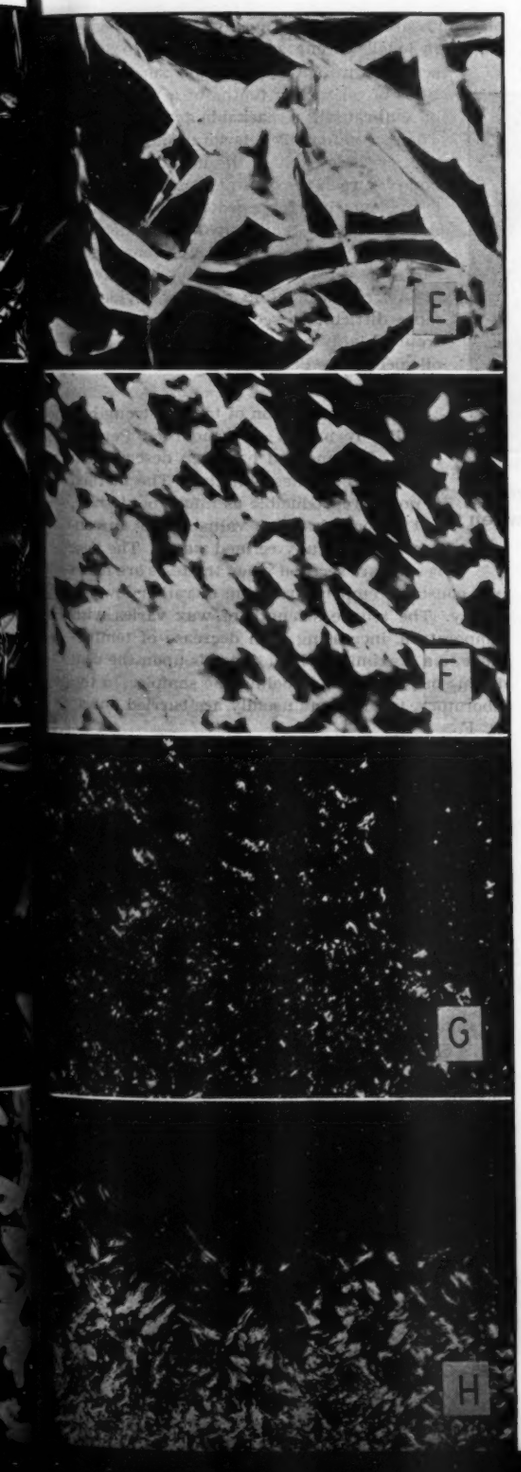



*Fig. 3a—Photomicrographs of waxes of commerce, partially crystallized. (E) Fully refined wax of 148° F. melting point; (F) a hard plastic or "amorphous" wax; (G) a soft amorphous wax; (H) Carnauba wax (South American palm). Magnification, 100-X*

are higher in quality than the scale waxes it should be remembered that the last mentioned are much lower in price and both products have their uses in commerce. The melting points of the scale waxes usually vary between 116 and 128° F., A.S.T.M., and the fully refined products between 122 and 140° F., although both may be higher in some cases.

The plastic waxes are distinguished by toughness, ductility and in general higher melting points than the scale and fully refined waxes, more stickiness, and usually are much darker in color. The melting points of the plastic waxes vary usually between 150 and 170° F. and the consistencies vary within wide limits.

The products described above do not exhaust all the possibilities in regard to waxes which can be secured from petroleum. A very useful product would be one which can be described as intermediate between the fully refined and plastic waxes. Such products have been prepared and it is only a question of time before they are available commercially.

Ozokerite and ceresine merit consideration at this point in the discussion. Ozokerite is a naturally occurring (mineral) hydrocarbon mixture which is solid at ordinary temperatures. The composition of ozokerite approaches the paraffinic, which distinguishes it from gilsonite, glance pitch, grahamite, which are basically asphaltic in composition. Montan wax is another wax which is found in nature, but mixed in with coal or lignite and is extracted therefrom with a solvent; it differs from ozokerite in that it contains organic oxygen compounds such as acids and esters. Ceresine is refined ozokerite, or a mixture of refined ozokerite with petroleum wax. Refined ozokerite usually varies between 150 to 180° F. in melting point, while montan wax may be higher.

An important test applied to all petroleum waxes, especially scale and fully refined products, should be analysis for oil content, but unfortunately there is no rapid and accurate method. The press method,[1] while reproducible and satisfactory in regard to certain specifications, and in plant control, does not show in any way the true oil content. The use of solvents[2] also have been proposed but as yet have not been worked out to the degree of accuracy necessary. Analysis for oil content, in order to be of all around value, should be accurate to within less than 0.1 per cent.

### Properties of Petroleum Waxes

The chemical properties of petroleum waxes are well known and do not require much discussion, except from certain standpoints. The waxes are fairly stable, as the name indicates, the word paraffin meaning inert. However, these products react readily with the halogens bromine and chlorine to form substitution products, which suggests that some day they will constitute a raw material for synthetic products of commercial importance.[34] Ordinary concentrated sulfuric acid does not react appreciably with pure hydrocarbon wax at ordinary temperatures, nor does alkali solution. The waxes are fairly resistant to oxidation, but it should be noted that oxygen or air react with them in the molten condition, slowly at temperatures below 180° F. and more rapidly above that temperature to form oxygen compounds such as carboxylic acids, ketones and lactones. This oxidation is accompanied by a sweetish rancid odor and in the extreme case the quality of the product may otherwise be impaired; for example, lowering of tensile and sealing strength. So it is imperative that wax in use be not heated to an excessive temperature for great lengths of time when exposed

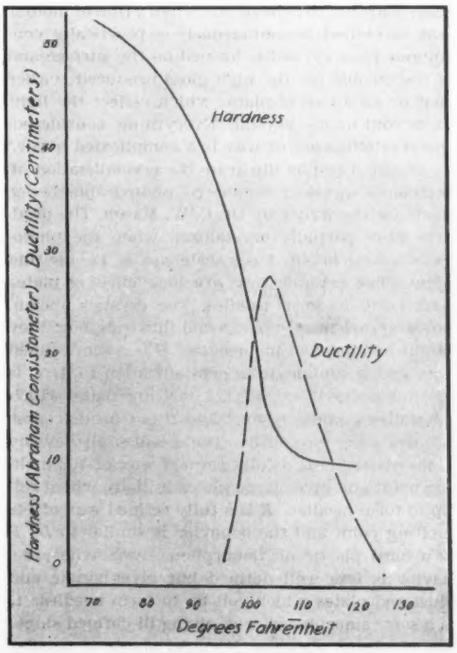



*Fig. 2—Hardness and ductility of fully refined wax, 132 A.S.T.M. melting point*

to air. It is probable that previously oxidized wax acts as a catalyst in this reaction. Waxes are also fairly stable to light but may deteriorate in color if the slabs are stored in light for a long time.

The petroleum waxes may contain, besides the solid hydrocarbons, traces up to several per cent of oily hydrocarbons, also traces of resin and asphaltic matter. However, a fully refined wax of high tensile strength, odorless and colorles, may be regarded as a mixture consisting of at least 99.5 per cent of solid paraffin and cyclic hydrocarbons. Normal paraffins have been positively identified in wax by many investigators, isoparaffins strongly indicated, and recent work points toward the existence of solid hydrocarbons of a cyclic nature.[2]

### Crystallization

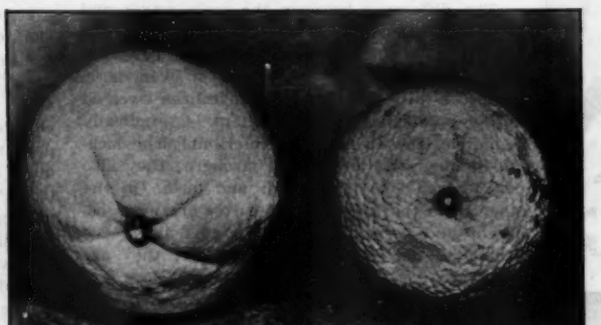
Several researchers check one another in finding that petroleum wax crystallizes in the orthorhombic system[4]; also transition points have been indicated.[5]

Wax and wax-containing products may display plate crystals, needle crystals and malcrystalline growths. The needle crystals frequently grow from small plates which are the first to appear when the crystallization begins. The tiny plates curl at the edges and the needles grow tangentially from these rolled sections. Needle wax, or possibly some unknown modifier, may cause plate wax to separate in the form of needles if the concentration of the modifier is sufficiently high that it separates simultaneously with the plates. In general it may be said that the mode of crystallization of the wax is influenced by a variety of factors such as the inherent characteristics, influence of one type on another, concentration of wax, rate of cooling, temperature to which the product has been heated before cooling, presence of modifiers or inhibitors, viscosity of medium. The so-called amorphous waxes display smaller crystals than the scale and fully refined waxes and in addition they have compounds present which are plasticized by oil; on the other hand the sweated waxes are not plasticized by oil. When a thin film of sweated wax is chilled very rapidly it is found that small plate crystals are produced which are oriented with the flat sides parallel to the surface. This phenomenon leads one to believe that when a film of molten wax is chilled instantaneously a practically continuous plate crystal is formed on the surface and is responsible for the high gloss produced; either that or an array of plates which reflect the light as a continuous crystal. Everything considered, the crystallization of wax is a complicated affair.[6]

Figure 3 and 3a illustrate the crystallization of petroleum waxes of commerce, photographs being made for the writer by Dr. C. W. Mason. The products were partially crystallized when the photographs were taken. *A* is a scale wax of 122 melting point. The crystals first are long curving plates which roll to form needles. The crystals shown, however, are mostly plates and illustrate how they might be mistaken for needles; *B* is a semirefined wax and is similar in its crystallization to *A*. *C* is a fully refined wax of 122 melting point which crystallizes similarly to *A* and *B* but forms coarse needles more promptly. The needles all develop from plates. *D* is a fully refined wax of 132 melting point and gives large plates initially which roll up to form needles. *E* is a fully refined wax of 148 melting point and the behavior is similar to *D*. *F* is a hard plastic or "amorphous" wax whose behavior is less well defined but gives single and clustered plates which roll up to form needles. *G* is a soft "amorphous" wax giving ill defined single and clustered platelets. No good plates or needles are obtained in any stage of the solidification, which extends over a considerable temperature interval. *H* is a Carnauba wax and displays feathering clusters of rather rough platelets, grouped roughly parallel as lamellae.

### Transparency

There are several factors which have been mentioned as affecting the transparency of wax; these are rate of cooling, cooling in vacuo, oil content, air bubbles, mode of crystallization, molecular spread, crystal condition. In practice slow cooling is depended upon to produce transparent sheets and at the same time it is necessary to develop good gloss. The transparency of wax is limited, however, because it is an anisotropic substance and microcrystalline. Also in making transparent waxed sheets, it would be desirable to have the index of refraction of the wax match that of the paper. Cellulose has an index of refraction which varies between about 1.528 and 1.560 or a mean of 1.533.[7] Paraffin wax also has two indices, the ordinary and extraordinary, the mean being about 1.520 for a wax of 140 melting point at 77° F.[8] Experiments by Green[9] in impregnating paper with isotropic liquids of various indices of refraction showed that the amount of light transmitted increased slowly up to 1.48 then more rapidly thereafter up to about 1.54 but did not sensibly diminish at 1.60. Hence it is indicated that the indices of the waxes 130° to 140° F. melting point are in the range which is fairly satisfactory, but advantages might be gained by going to higher melting points, since the index of refraction of the wax increases with increase of melting point. The choice of paper, as in all waxing operations, is of prime importance in the production of transparent waxed sheets, the glassine types giving the best results.



—Courtesy Brogdex Co.

*Fig. 4—Photographs showing relative shrinkage of waxed and unwaxed oranges. Both were the same size when picked and were picked the same day*

In regard to quantitative measurement of glassine transparency, Wicker[10] states as a fundamental consideration that the light scattering characteristics of the sheet is the single property which is most closely related to transparency as observed visually.

### Water Vapor Resistance

During recent years a great amount of research has been directed toward permeability of various films to vapors,[11] especially water vapor, and where hydrocarbon wax was among the substances investigated, its superiority, as far as resistance to water vapor is concerned, was demonstrated. As an example Figure 1 shows graphically the findings of Herrman.[12] It is interesting to mention in passing that practically all of the moisture proof sheets contain at least some proportion of wax.

The determination of vapor resistance has been the subject of one of the methods set up by the Technical Association of the Pulp & Paper Industry and the particular procedure and apparatus generally used are those of Abrams.[13] A sheet of the paper is clamped over the top of a metal cup containing water. The assembly is weighed and placed in moving atmosphere of rather low relative humidity. The cup is weighed at intervals and the loss represents the permeability to moisture vapor.

### Tensile Strength and Hardness

Tensile strength tests have been found useful as a control method in the manufacture of fully refined wax and to some extent as a means of defining minima in regard to wax used for self-sealing sheets. The scale waxes usually have tensile strengths in the range of 40 to 75 pounds to the square inch and the fully refined waxes 200 to 400 pounds to the square inch at 70° F. As the tensile strength of a wax begins to exceed 160 pounds it acquires self-sealing strength but in regard to the optimum tensile for best results in self sealing, the writer does not wish to commit himself. One point to be mentioned, however, is that sufficient allowance should be made for deterioration which takes place in heating tanks and machines. A wax possessing high tensile strength, is susceptible to deterioration through heating and small quantities of oil; a few tenths of a per cent of oil will cause a remarkable drop in tensile. The reason for this deterioration is that the wax crystals exclude the oil and thus the bond between the crystals is lost. Hence, it is evident that for sweated waxes which have not been adulterated by something which is plasticized by oil, the tensile test serves as a test for oil content. It may be of interest to mention that it is evidently more difficult to secure high tensile wax from a highly paraffinaceous type of crude oil such as the Pennsylvania, than from the mixed-base type.

The determination of tensile strength is usually by means of a modified Perkins tester. The method has been described in a Bureau of Mines bulletin.[14] The method is not as reproducible as might be desired, but nevertheless is a valuable test in connection with fully refined waxes. The best results are secured when the tests are made in a constant temperature room of rather low humidity. The tensile strength of wax varies with temperature, increasing with decrease of temperature to a maximum which depends upon the conditions of pouring and cooling the sample. In the laboratory, tensile tests usually are carried out at 70° F.

The hardness or consistency of wax is a property which offers interesting possibilities as an aid in evaluating but so far has found little application except with the plastic waxes. The needle penetrometer cannot be used with the sweated waxes satisfactorily throughout a wide range of temperature. The Abraham consistometer can be used, however, when especial care is taken in preparing samples for testing, and curves can be secured which show the hardness in fundamental units. Figure 2 gives the hardness curve of a sweated wax by this method, a ductility curve for the wax being shown on the same graph.[15] The ductility was determined by the A.S.T.M. apparatus (D113-35) with a rate of extension of 5 cm per minute. The hardness curves for the plastic waxes more nearly approach a straight line and are more nearly horizontal to the temperature axis. Melting point has been suggested as a measure of the consistency of waxes but certainly may be very misleading. Softening point tests similar to those made on asphalts, also have been applied to waxes in a few laboratories, and candles are subjected to bending tests to estimate rigidity at elevated temperatures.

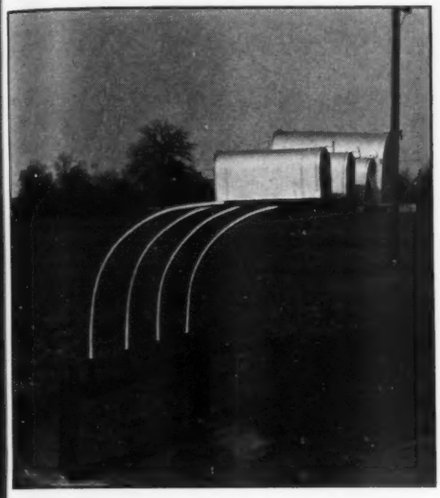
The toughness of wax is interpreted by the

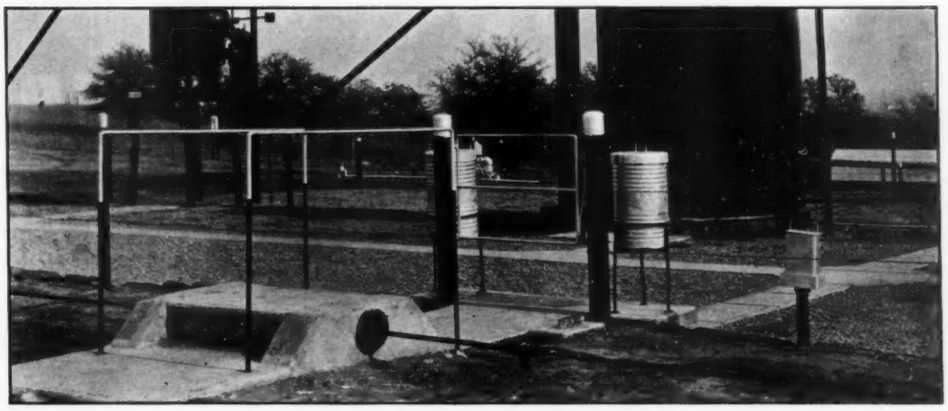
*(Continued on Page 45)*

# OPERATING IDEAS

## Mail-Box Stand from Old Rods

In the Naval Reserve field in Osage County, Oklahoma, one large oil company has mounted its mail boxes for the company camp on stands of unusual construction. Two pieces of reclaimed tubing were sunk in concrete blocks with a horizontal piece connecting them. Five-eighths inch pull rods, bent into arcs, were then welded to the cross-member and the mail boxes welded to the other end of the rods. This places the boxes within convenient reach of the mail carrier and at the same time keeps the base of the stand from interfering with road-grading work of the highway maintenance crew.



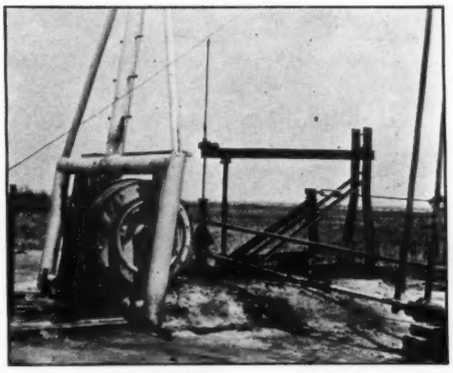


## Trash Barrels Encourage Neatness at Tank Battery

To encourage keeping tank batteries free from debris one company operating in the Osage County fields has placed trash barrels, mounted on steel supports, at each entrance to the tank battery. Steel boxes for storing tank seals in are also placed at each battery. Thus by these means the employes are encouraged to keep the batteries free of wiping clothes and other particles of waste ordinarily found at the average battery. The fencing and gates are made from reclaimed sucker rods, pull rods and tubing, this equipment also being kept brightly painted and free from oily hand marks at all times.

## Novel Pulling Mast

In order to make it possible to hold the mast in a nearly upright position during pulling operations an oil company operating near El Dorado, Kans., is using the mast shown in the accompanying photograph. The A-frame mast of the unit rests on a square frame large enough to swing over the winch, thereby placing it in an almost vertical position. The mast, A-frame, bracing and foundation were fabricated from used pipe.



## Pull-Rod Welding Equipment

One oil company operating several pumping powers has installed a welding forge at each power, the forge consisting of a piece of 12-inch casing with a gas burner inside. A hole, 1½ inches in diameter, was cut in each side of the casing so that pull rods may be placed inside and heated to the proper temperature for welding. The heater is provided with a welded sheet-iron cover to protect it while not in use. A large piece of channel iron serves as an anvil. All pumpers are instructed how to make proper welds, so that due to the convenience of the equipment much shutdown time is eliminated.

## Field Gathering Station Protected by Embankment

A field gathering pump station for one of the pipe lines out of the Goldsmith field of Ector County, West Texas, is shown in the accompanying photograph. As usual, the location of this station was desired at the lowest point in the field so crude could gravitate to it from lease tanks. In as much as high water often rises in this low part of the field, a hole or pit was dug for the erection of the pump station, and all the dirt and rocks removed were placed around it as a protection wall against rising high water. Water would have to rise over 4 feet here before it would interfere with the operation of the gathering station.

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# Drilling in Wilmington Harbor District Presents Unusual Problems

By A. A. CARREY
Consultant Petroleum Engineer and Geologist
Long Beach, Calif.

**A.P.I.—Extemporaneous remarks before Los Angeles Basin Chapter, January 11, at Long Beach, California**

The city of Long Beach, Calif., finds itself in the unique position of having a portion of two major oil fields within its corporate boundaries, the first being Signal Hill, which has been producing since 1921, and now the major portion of the newly discovered Wilmington field will lie within the harbor district of the city of Long Beach.

The Long Beach harbor is one of major importance on the coast of California and has undergone, in the past few years, an enormous amount of development and increased importance is being placed on the Long Beach harbor by shipping interests all over the world. The development of the newly discovered oil field must be syncronized with and included within the area of principal development of the Long Beach harbor. . . .

The Wilmington field was discovered by General Petroleum Corp. upon the completion of its No. 1 Terminal in December, 1936. All of the development took place within the boundary of the city of Los Angeles and proceeded in a northern and northwestern direction. It is with a great deal of satisfaction to the many engineers and geologists that the discovery was based primarily upon the interpretation and use of geophysics in determining that a structure existed in this area. Credit must also be given to General Petroleum Corp. in the very efficient manner and modern methods used in the drilling of the first well. As a result of the completion of the first well a major drilling campaign immediately followed and approximately 200 wells have been drilled within the Wilmington area.

It soon became evident that a large portion of this field would extend in a southeastern direction across the boundary between Los Angeles and Long Beach. On June 15, 1937, by popular vote, the Long Beach area was opened for the drilling and development of oil. The ordinance provided for the drilling of one well to the acre and followed along the lines of the present state law that provides for the drilling and operating in new fields. The board of harbor commissioners of Long Beach was immediately called upon to prepare ordinances and restrictions necessary for the protection of the city's interests. Harbor ordinance No. 22 was passed and is at this time being adhered to by all operators in the Long Beach area. . . . The restrictions deal primarily with safety regulations and the prevention of damage from fire, blowouts, and any damage that might hinder shipping or the operation of an active harbor. . . .

The structure of the Wilmington-Long Beach field is an anticline with a northwest-southeast trend and is a portion of the major uplift upon which the Torrance field was discovered and developed. The uplift continues in a southeasterly direction into the Pacific Ocean. The structure is one of very flat dips and the area of accumulation will be very extensive. It appears at this time that there are at least two, or possibly three cross faults that occur in a more or less north-south direction and will undoubtedly cause accumulation within the structure to be divided into three segments. Considerable evidence has already been found in the Long Beach area of the existence of faulting.

*A. A. Carrey*

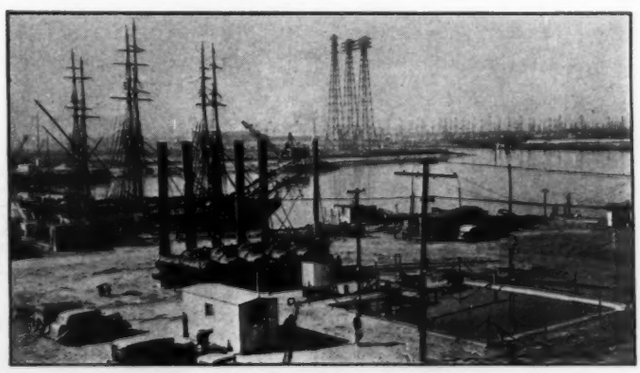
However, due to the limited number of wells drilling at this time in the Long Beach area, it is impossible to determine or trace these faults with any degree of accuracy. From the development in the Long Beach area to date it appears that all of the zones discovered in the Wilmington area will also be present in the Long Beach area. The most concentrated drilling in the Long Beach area is occurring in the vicinity of the entrance channel to the Long Beach harbor and is extending in an eastern and northeastern direction. The wells that are drilling on the east bank of the entrance channel have intersected the Tar zone, the Ranger zone, and the Terminal zone at a higher stratigraphic position than any of the wells in the "Wilmington" or "Ford" areas. The wells that are drilling near channels Nos. 2 and 3 are apparently lower on the structure. Sufficient evidence has been obtained at this time to tend to show that the axis of the structure will be located in a northwest-southeast direction and will continue from the Ford plant area in a southeast direction to the Long Beach entrance channel.

The Superior Oil Co. No. 1,960, Community No. 1, has been found to intersect all zones higher than any well drilled heretofore in the entire Long Beach and Wilmington area. It has also proven the existence of accumulation in the Upper Tar zone, the Ranger zone, and the Terminal zone. It appears at this time that the Aillied Petroleum Co. No. 23, located near the intersection of Broadway and Santa Clara Avenues, is considerably down structure from the Superior Oil Co. No. 1,960 well and that it will be productive in the Ranger zone. The company drilled to a sufficient depth to intersect the top of the Terminal zone and found water sands that might preclude possibilities of production from the Terminal zone at this position on the structure.

The General Petroleum Corp. No. 3 Channel, Community No. 3, and the General Petroleum Corp. No. 1 Blinn found a similar condition of accumulation in the Ranger zone, as did the Allied Petroleum No. 23.

This development more or less conforms with the conditions of accumulation as they are found in the Wilmington area; that is, that the Ranger zone covers the greatest area and will be productive in certain areas in which the Terminal zone will probably be incapable of production. The apex, or highest point on the structure, will undoubtedly be in the Long Beach area, and it is reasonable to expect that it will be in the vicinity of the entrance channel to the Long Beach harbor. As the development progressed in the Wilmington area in a southeast direction the gravity of the oil in the zones produced increased, and it is reasonable to expect that the Long Beach area should produce oil of even higher gravity than the area commonly known as the "Ford area." The cores from the wells along the entrance channel indicate that a very good quality of oil can be expected from these wells. There are no wells on production in the Long Beach area at this time.

The board of harbor commissioners of the city of Long Beach have received applications for the drilling of 109 wells, permits for the drilling of 45 wells have been granted, and at this time there are 14 wells in the process of drilling, with only three of them of sufficient depth to prove the existence of accumulation in the Terminal zone. The Su-



*Central boiler plant and mud pit in the Wilmington field. Because of congested conditions, the Hancock Oil Co. has installed the above central plant to serve six or eight wells. In the harbor is seen the "Bounty" of movie fame.*

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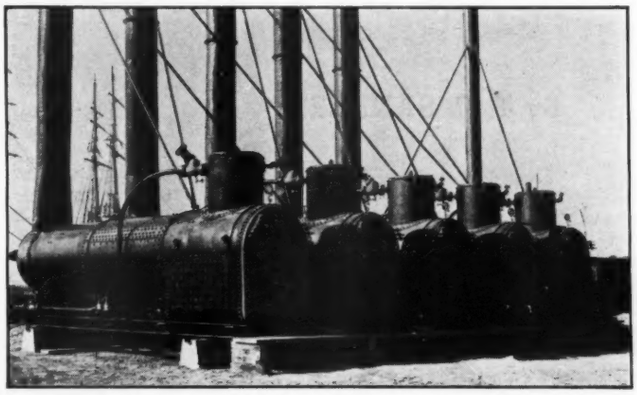
perior Oil Co. No. 1,960, well No. 1, intersected the Upper Tar zone at 2,100 feet, the top of the Ranger zone at 2,338 feet, and the top of the Terminal zone at 2,858 feet.

All operators have found that the use of electrical coring is indispensable in their development program. It enables the engineers to study in detail the various sections and gives many positive markers for correlations with which to determine the structure and enables a uniformity in water shut-off depths, which is one of the most important features in the development of any oil field. Without the aid of these new and advanced devices we could expect the same difficulties to occur and mistakes to be made that were made in the wells that were drilled in years gone by.

The electrical logs are showing that the structure in the Wilmington and Long Beach field is more complex as the work progresses. It appears that there is an unconformity between the top of the Tar zone and the top of the Ranger zone. The Tar zone is present in the Wilmington and Ford areas but seems to have been cut out in the Long Beach area. However, in the Long Beach area an Upper Tar zone is present that was not saturated in the Wilmington area. The unconformity of the section at the top of the Ranger zone seems to be more or less consistent with the Wilmington and Ford areas. The wells drilling in the Terminal zone at this time have penetrated approximately 700 feet of Terminal zone and it is my belief that there will be at least 1,100 feet of total penetration in the Terminal zone. It also appears that the sand zones thicken in the Long Beach area and this should be conducive toward bigger wells than those drilled in the Wilmington area. No wells at this time contemplate drilling to depths sufficient to determine the productivity of the so-called "Deep" or "Ford zone." This zone should occur on structure in the Long Beach area at about 5,000 feet. By mutual agreement between the operators it is agreed not to develop the "Deep" or "Ford zone" until some future date.



*Unitized boiler plant in the Long Beach section of the Wilmington field. Beside the five boilers, a superheater, water tank, and boiler feed-pumps are mounted as units on the concrete foundations, thus making the installation very compact.*

### Terminal Zone Production

It has been agreed between the operators to produce the total thickness of the Terminal zone. I believe this to be a good decision because it will avoid the occurrence of several drilling campaigns or "booms" that might occur by operators wishing to penetrate deeper into the zone. It is also the wish of the operators to place the Ranger zone behind blank pipe and not produce this zone until some later date. It is questionable whether this program will be adhered to since some of the operators would like to produce the Ranger zone as well as the Terminal zone at this time.

The casing program that seems to be generally adhered to in the Long Beach area is the landing and cementing from 200 to 300 feet of 18⅝-inch surface pipe; a string of 13⅜-inch or 11¾-inch at the base of the second shale, which lies directly over the Ranger zone; and then completing with an 8⅝-inch string of casing perforated in the Terminal zone; a combination cement job at the top of the Terminal zone and overlapping the blank pipe up and into the primary water string. In the event that the operators decide to produce both the Terminal and the Ranger sands in any one well, they will undoubtedly place their tubing in the hole with a packer so set as to produce the Terminal zone through the tubing and production from the Ranger zone allowed to flow between the tubing and the 8⅝-inch casing. . . .

It was found in the Wilmington field that the wells were subject to considerable sand movement with the production of their oil. A curtailment program would minimize the danger that is always present in fields which have sand troubles accompanying the extraction of oil. By maintaining back pressure on the wells, sand trouble should be eliminated for a considerable length of time. The time will come, however, when these wells will cease to flow and it will be necessary to place them on the pump. The wells on the pump in the Wilmington area are experiencing increasing difficulties with sand in the production of their oil. The sand conditions are peculiar to the field, and it is reasonable to expect the same conditions will exist in the Long Beach area. Methods for the handling of the sands in the production of oil appears to me to be one of the most serious problems that will confront the operators some time in the future in this field. It can only be hoped that in time to come more efficient and improved methods can be developed by concerns who are interested in efficiency in pumping and production methods, and that they will be able to furnish the industry with a practical method for the extraction of oil under adverse sand conditions.

In conclusion I wish to draw attention to the fact that the Long Beach portion of the Wilmington oil field is in its first stages of development and that undoubtedly many conditions will arise and facts be determined that cannot be foreseen at this time. I have merely attempted to trace the development as it is at this time and purvey some of my personal opinions of conditions as they may occur at some time in the future.

## Western Metal Congress to Be Held in Los Angeles, Calif.

Based on the theme, "Metals in Industry," the Western Metal Congress and Exposition, March 21 to 25, in the Pan-Pacific auditorium and Biltmore Hotel, Los Angeles, is expected to attract 3,000 executives, plant operators, metallurgists and superintendents to the exposition.

Eighteen national technical societies are cooperating in the double event. These are: American Chemical Society, American Foundrymen's Association, American Institute of Aeronautical Engineers, American Institute of Electrical Engineers, American Institute of Mining and Metallurgical Engineers (Institue of Metals), American Petroleum Institute, California division), American Society of Civil Engineers, American Society of Mechanical Engineers, American Society for Testing Materials, American Welding Society, Chamber of Mines and Oils, Metal Trades and Manufacturers' Association, Mining Association of the Southwest, National Purchasing Agents' Association, Pacific Coast Electrical Association, Pacific Gas Association, Society of Automotive Engineers and the American Society for Metals.

The American Welding Society, American Society of Mechanical Engineers and the Pacific Coast Gas Association will meet independently in their own sessions during the week of the congress.

The tentative programs for the petroleum and metallurgical sessions are as follows:

### Petroleum Sessions

"Metals Used in Petroleum Production: Well Casings, Drills, Sucker Rods, Etc.," Harry McQuaid, metallurgist, Republic Steel Corp., Cleveland.

"Metals Used in Pipe Line and Pipe Line Station Construction," L. F. Scherer, assistant chief engineer, Texas Pipe Line Co., Houston.

"Corrosion Protection of Pipe Lines in California Soil," Gordon N. Scott, pipe line technologist, Los Angeles.

"Metals Used in the Polymerization of Oils." Author to be announced.

"General Application of Metals in Refining," R. L. Wilson, district manager, Climax Molybdenum Co., Canton.

"Iiquid Corrosion of Metals Used in Oil Industry," Dr. F. N. Speller, chief metallurgist, National Tube Co., Pittsburgh.

"Metals for High-Temperature Resistance in Refining Service," R. L. Wilson, district manager, Climax Molybdenum Co., Canton.

"Valves for the Petroleum Industry," George Scherer, chief metallurgist, Merco-Nordstrom, Oakland.

"Typical Failures of Still Tubes in Refinery Service," E. C. Wright, chief metallurgist, National Tube Co., Pittsburgh.

### Late Developments in Metal Industry

"Grain Size Control in Carbon Steels." Author to be announced.

"Fabrication and Application of Stainless Steels Containing Up to and Including 16 Per Cent Chromium," Prof. Bradley Stoughton, dean of engineering, Lehigh University, Bethlehem.

"Fabrication and Application of Stainless Steels Containing 18 Per Cent Chromium and Over," Dr. V. N. Krivobok, chief metallurgist, Allegheny Steel Co., Brackenridge.

"Low-Alloy High-Strength Steels With Particular Reference to New Applications in Tank-Truck Construction." Author to be announced.

"Controlled Atmospheres." Author to be announced.

"High Speed and Highly Alloyed Tool Steels," J. P. Gill, chief metallurgist, Vanadium Alloys Steel Corp., Latrobe, Pa.

"Flame Hardening," G. V. Slottman, engineer, Air Reduction Sales Co., New York City.

"S.A.E. Steels," Prof. Bradley Stoughton, dean of engineering, Lehigh University, Bethlehem.

"Carbon and Low Alloy Steel Tools," J. P. Gill, chief metallurgist, Vanadium Alloys Steel Corp., Latrobe, Pa.

"New Developments and Application of Hard Facing Material," C. C. Pendrell, district sales manager, Haynes-Stellite Co., Los Angeles.

"A Review of Metallurgical Standards," Harvey A. Anderson, metallurgical engineer, Western Electric Co., Hawthorne, Chicago.

"The Part Aluminum Plays in Diesel Engines," P. B. Jackson, engineer, Aluminum Co. of America, Cleveland.

"Diesel Engines for Trucks," C. L. Cummins, president, Cummins Engine Co., Columbus, Ind.

# Preparations Made for Mining Oil From California Deposit

By T. P. SANDERS

Oil mining has been widely acclaimed as a possible means of recovering oil left in reservoirs by the present-day production methods. It has proven economically successful in some foreign countries, but in the United States the abundance of oil has always made it an unsound investment. It is evident that underground mining for oil cannot compete on a cost basis with present production methods, and if it could it is doubtful

*Oil impregnated diatomaceous earth containing tar and shell*

if an industry providing such hazardous and disagreeable employment would meet with much encouragement. However, mining is not necessarily underground. The bulk of our iron, as well as aluminum and other metals, is taken from open-pit mines, and it now seems a certainty that oil mining will begin as an open-pit operation.

Approximately 12 miles southwest of Santa Maria, Calif., is a deposit of diatomaceous earth which is impregnated with oil. Sea shells are abundant in the deposit, and many of these are coated or filled with tar. In the past, several attempts have been made to remove oil from this deposit, but profitable operation was never accomplished. Plans are nearly complete for another attempt which is expected to begin in April. Several factors make prospects encouraging for the new venture. Experimental work has been in progress for some time in Los Angeles under the direction of L. E. Walther for a Minnesota construction company. Several tons of material have been processed in the experimental plant, and present plans call for a large sized plant on the property to be constructed to the same design.

Mining will be carried on with a steam shovel, using dynamite to dislodge the ore. It is expected that a gravity system will be used to conduct the material to the plant. The plant may be built to handle 500 tons per day. Whereas other methods tried at this location have all operated as batch processes, the proposed plant will operate as a continuous process. The oil-impregnated material will pass through a revolving oven in which it will be heated to approximately 1,100° F. to drive off the oil as a vapor. Most of the vapors will be condensed, but it has been found experimentally that more than enough gas is liberated than will be required to heat the material in the rotary oven. Another possible source of fuel is the carbon which remains in the diatomaceous earth after the oil has been expelled. This carbon will burn readily in an air or air and natural-gas blast.

### Feeding Ore Into Oven

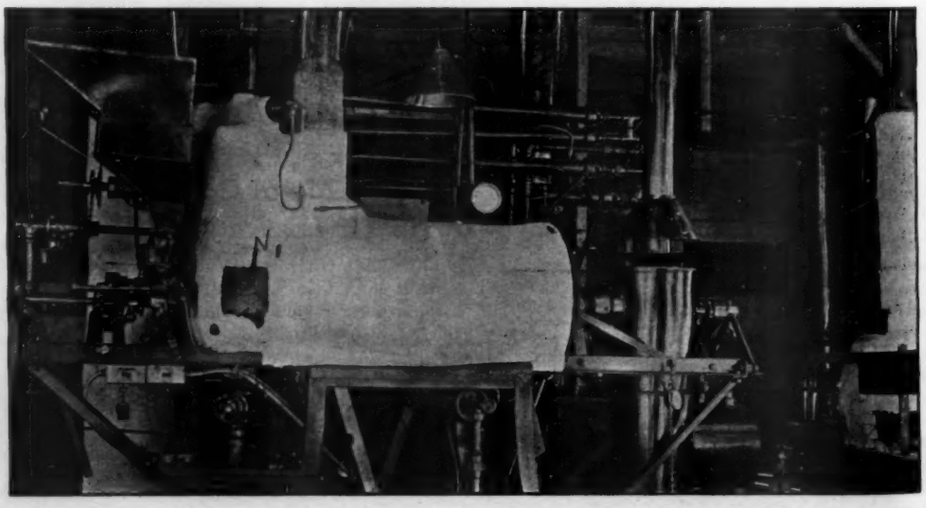
One serious problem encountered has been that of devising a method of feeding the material into the oven without admitting air. On the experimental plant a screw conveyer is used, but an air-tight plunger is planned for the large plant. A helix inside of the rotary oven will carry the material through the furnace in about 45 minutes. It will be removed by means of a screw conveyer. The furnace is designed so that the vapors, after being driven from the ore will pass through an annular space around the incoming ore. Here some of their heat will be taken up by the cold ore. This will cause condensation of tar, which will be drawn from the furnace, carrying with it most of the dust which tends to accompany the vapors when they are driven from the ore. The vapors remaining after condensation of the tar will pass through a series of condensers.

Experimentally the raw material has yielded an average of 64 gallons of oil per ton, or roughly 1½ bbls. per ton. Twenty to twenty-five gallons of water are usually driven from each ton along with the oil recovered. The product from the experimental plant is at present being condensed in two containers. Sixty per cent of the output ranges in gravity between 25 and 28 degrees, while the rest is 20-gravity oil.

It is still undecided how the oil will be used, but plans are to make the recovery from the diatomaceous earth the initial step in a complete processing system. It has been found that the product is rich in aromatics, and since the supply of these from California crudes is decreasing, it is planned to install facilities for their recovery. The diatomaceous earth deposit lies adjacent to a railroad, and at one time a spur was built into a quarry where some of the material was mined. For this reason no difficulty is expected in transporting the products, whatever they might be.

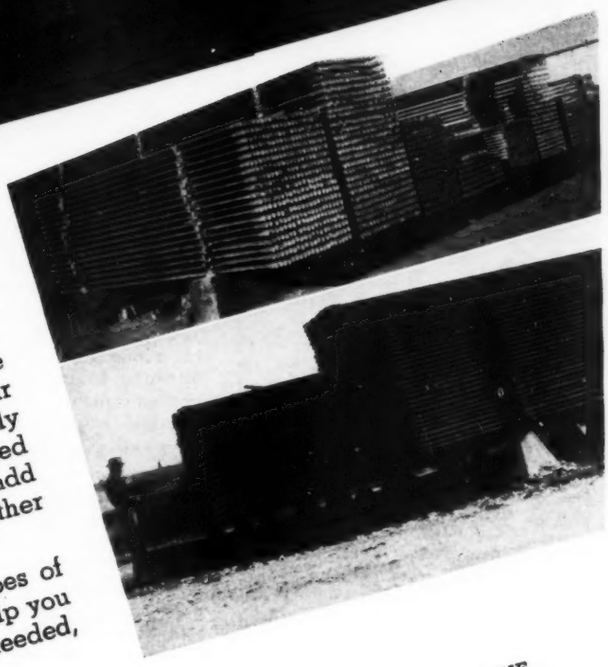
The diatomaceous earth, which remains after the oil has been removed, is marketable after calcining. A cement company has offered 50 cents per ton for this material at plant location. It is to be used as an aggregate in making a light, insulating concrete for building purposes.

In case this new venture in the oil industry meets with economic success, a business of sizable proportions is expected to develop. It is not known what other similar deposits may be available, but the Santa Maria deposit is of considerable extent. It is reported that an oil test drilled in the area found the material extending to a depth of 1,500 feet, though no production was obtained. One estimate shows that the oil-impregnated material would last about 150 years if it were used at the rate of 10,000 tons per day. While it may be unlikely that any great quantity of the material will be removed in the near future, it seems certain that as wells become deeper and production costs become greater, this deposit will play a part in bolstering declining reserves.



*Experimental equipment for extracting oil from diatomaceous earth. Operation is by continuous process for both the experimental and planned plants.*

# To Reduce SUCKER ROD Costs



●● Where your Sucker Rod requirements justify volume buying, you can take care of your general needs in a district and reduce costs to the minimum by buying Jones Rods in carload lots from us for direct shipment to your warehouse.

Often, however, a well in the district will require a different type of Rod than that carried in your warehouse stock. In this case you can frequently save money by picking-up the type Rod needed from a Bridgeport store stock, rather than to add the expense of trucking the Rods in from another district.

Our store stocks of the commonly used types of Jones Sucker Rods can be drawn upon to help you reduce costs by supplying the type of Rod needed, when and where needed.

*You can quickly check up on our delivery service and comparative costs; promptly obtain well studies, or order Jones Sucker Rods in any quantity needed by*

*telephoning*

JONES WELL STUDIES, WHICH WE WILL ARRANGE FOR YOU, MAY FURTHER HELP IN REDUCING YOUR SUCKER ROD COSTS.

THE RIGHT ROD FOR YOUR WELL IS A JONES ROD OF THE TYPE TO FIT THE INDIVIDUAL WELL CONDITIONS.

HOUSTON
L. D. 203 Local "Cap" 1301

DALLAS
L. D. 584 Local 2-4282

SAN ANTONIO
L. D. 219 Local "Gar" 5671

CORPUS CHRISTI
L. D. 31 Local 574

The BRIDGEPORT MACHINE COMPANY
Factory and General Offices, Wichita, Kansas

SHREVEPORT
L. D. 15 Local 6481

ODESSA
L. D. 683 Local 684

TULSA
L. D. 681 Local 5-3204

OKLAHOMA CITY
L. D. 785 Local 7-2725

WICHITA
L. D. 59 and 116
Local 2-1431 and 2-1432

AND BRANCH STORES

# Resistance of Seamless Tubular Materials Against Collapsing Pressure

By F. G. TEBENSZKY
Mannesmannrohren-Werke, Dusseldorf, Germany

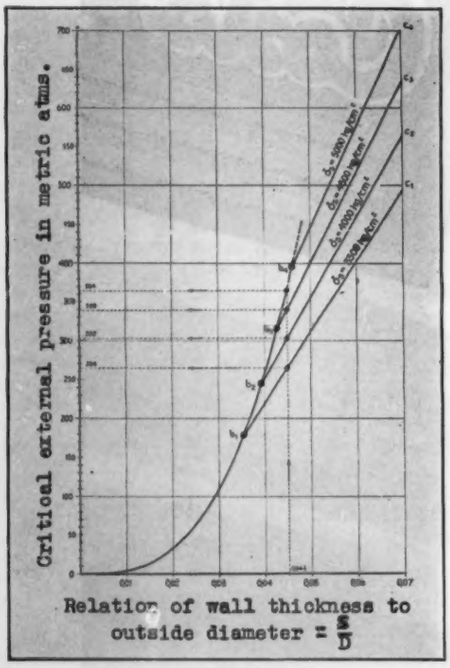



*Fig. 1—Chart for determining critical external pressures of tubular materials*

An outstanding development in the engineering of deep-well drilling during the past decade is the sinking of wells down to very deep oil-bearing strata, and tubing thus sunk is claimed to have reached an approximate depth of as low as 3,500 meters (11,500 feet). It is obvious that such a course of development has naturally directed attention to the vital importance of basing such drilling work on scientific and empirical fundamentals.

The drilling operation must be watched with increasing care at progressively increasing depths of the well, considering that in forcing the tubular column downwards the risk of causing the whole project to fail becomes potentially greater.

A consideration of the factors bearing upon the success of deep-well drilling involves the need of discussing the pressure that is exerted by a water column surrounding the coupled drill-pipe sections when there is no water column of equal height on the inside of the tube. A pipe sustaining an external pressure uniformly distributed over its full peripheral surface is deformed into an oval cross-section. If this load reaches a definite height—namely the critical external pressure—the pipe will collapse.

The critical external pressure is easily determined, if the cross section under pressure is a theoretically true circle. However, the formula of calculation applied in the latter case is not suitable, if there is even the slightest deviation from a perfectly true circle. As a matter of fact, it is practically unavoidable to eliminate some ovality of the drill pipe as manifested by the mill limits.

Since the resistance to outside pressure decreases with an increasing ovality of the tube, the formula as applied to the perfectly true circle would not give a correct result. The variation in the wall thickness should also be taken into consideration. In fact, it appears rather difficult to find a definite calculation based on practical conditions. This is manifest by the numerous attempts to solve the problem theoretically.

All research work done with the object of determining the entire range of factors referred to above, and endeavors made to incorporate them in a handy reference formula have failed. The attempts produced results, which, at the best, are only approximate solutions. Reference is made in this connection to thorough investigations conducted by Dr.-Ing. M. Geller.[1] A solution of the problem could only be arrived at by running practical tests.

The first experiments carried out along these lines were probably those conducted by Prof. R. J. Stewart, Pittsburgh, and published in the Transactions of the A.S.M.E. under the title of "Collapsing Pressure of Bessemer Steel Lapwelded Tubes, 3 to 10 Inches in Diameter."

However, the empirically determined formulas of Professor Stewart are only applicable to lapwelded tubes with a tensile strength of 49,000-60,000 pounds per square inch. Not until 1924 was mention made, by Prof. Harold A. Thomas at a Congress Meeting of the American Petroleum Institute, of two formulas which consider the yield point of the material and hence can be used for seamless drill pipe.

The Mannesmannrohren-Werke has ever recognized the importance of this problem, and tests were started by it along these lines as far back as 1914. This research work, however, could not be finished and evaluated due to the intervention of the Great War.

### Large-Scale Tests

Large-scale tests were restarted in 1924 and a detailed report on the outcome of exhaustive investigations was published in a bulletin issued in August, 1926 ("Resistance of Mannesmann Seamless Steel Tubes Against the External Pressure of Fluids"). As a result of these tests the following formula was derived for the collapsing pressure, which, however, due to its empirical deduction, could only be applied to a material with a tensile strength ranging between 78,000 and 92,000 pounds per square inch:

$$P_k = 107{,}600 \left(\frac{t}{D}\right)^3 + 626.2 \left(\frac{t}{D}\right) \quad \ldots\ldots\ldots (1)$$

in (metric) atmospheres (1 at. = 14.223 lbs. per sq. in.)

This formula does not take the yield point of the material into consideration, and this fact appeared detrimental when the use of materials with higher strength properties increased. Investigations were continued for this reason. Realizing that conditions governing a tube under pressure above atmospheric are comparable with those prevailing when bars kink in being compressed, and recognizing also that the distinguishing feature between the elastic range and yield phase as characterized by Euler (hyperbola) and Tetmayer (straight line) equations, holds true with regard to the external pressure problem, the possibility of revising the formula became evident.

From tests conducted in 1924, the Mannesmannrohren-Werke recently deducted two improved formulas relative to the critical external pressure range, and they examined their applicability by running extensive check tests. These formulas, of

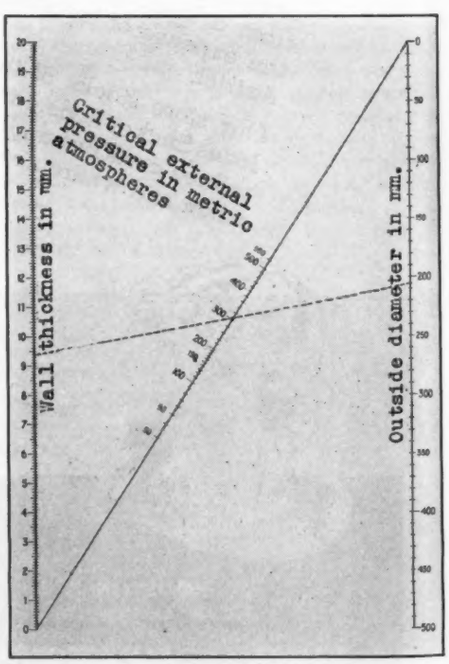
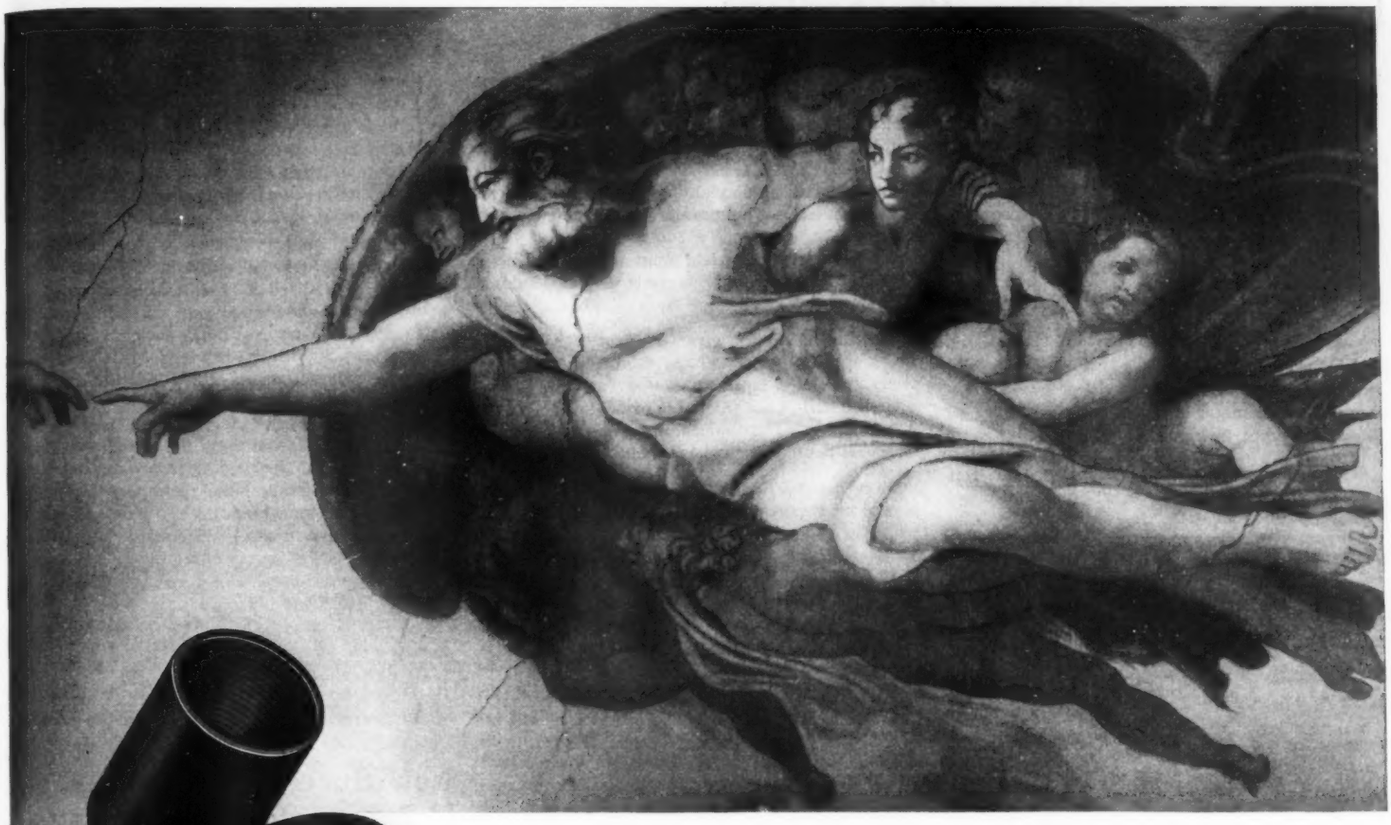
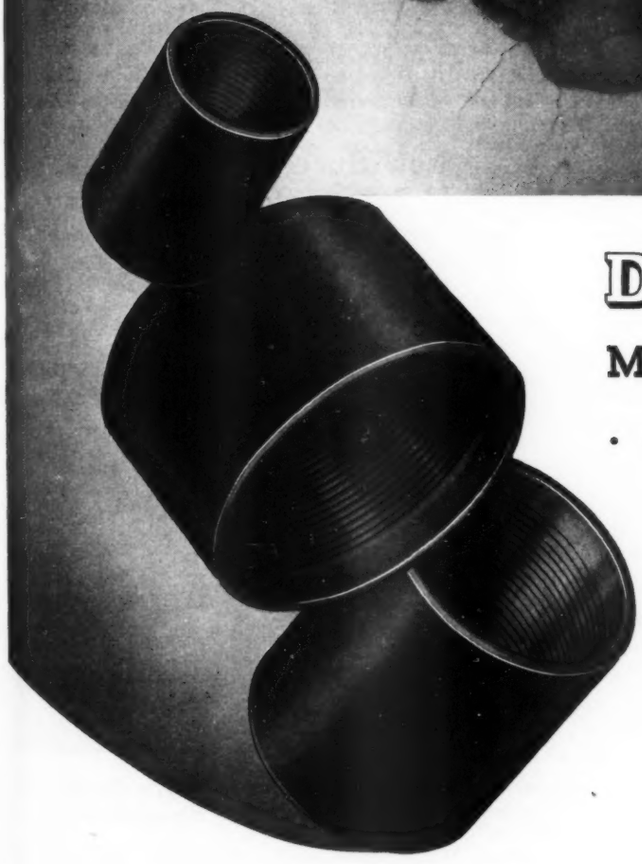



*Fig. 2—Nomographic chart suitable for tubular materials having a yield-point of 57,000 pounds per square inch. For an 8⅛-inch A.P.I. casing with an outside diameter of 206.375 mm. and a wall thickness of 9.398 mm. the critical external pressure amounts to 302 metric atmospheres.*

[1] "Der Bauingenieur," 1928, p. 828 u. 839, "Contribution to an Investigation of Tubes Under External Pressure."
"Die Rohrenindustrie," 1931, p. 265, 281, 291; "Uber den Widerstand gegen Aussendruck von Rohren mit ungleichmassiger Wandstarke."





# DESIGNED TO ENDURE . .

## MICHELANGELO'S Creation of Man . . . . and HARRISBURG STEELS

BOTH BY MASTER CRAFTSMEN

Spurning assistance because none could approach his perfection, Michelangelo Buonarroti (1475-1564) began in May 1508, his immortal fresco.

Four and a half years later, this engrossing masterpiece graced the ceiling of the Sistine Chapel, The Vatican, Rome. Designed to endure, it will remain for all time a marvel of artistry, of vast scope and lasting brilliance, a glorious monument to an outstanding genius.

No less essential than in art, enduring perfection is the goal of master craftsmen in this industrial age. Harrisburg products from custom-made metals are designed to endure, to fill specific requirements with elevated standards of quality, to fashion for each industrial use that steel which will yield the utmost in continued, economical and enduring service.

ALLOY AND CARBON STEELS · DROP AND HOLLOW FORGINGS · PIPE FLANGES, COUPLINGS, BULL PLUGS · PUMP LINERS · CYLINDERS · COILS, BENDS

which should always be applied the one giving the lower value, are as follows:

$$P_k = 2E\left(\frac{t}{D}\right)^2 \quad \text{(for the elastic range)} \quad \ldots (2)$$

$$P_k = f_s\,(2.63\,\frac{t}{D} - 0.043) \quad \text{(for the yielding range)} \quad (3)$$

In these formulas:

$P_k$ = critical external pressure in (metric) atmospheres.
E = Young's modulus of elasticity = 2,000,000 kg/cm.²
t = thickness of wall in cm.
D = outside diameter of the tube in cm.
$f_s$ = yield point in kg/cm.²

The accompanying diagrams, which have rendered good service in practice, will no doubt prove

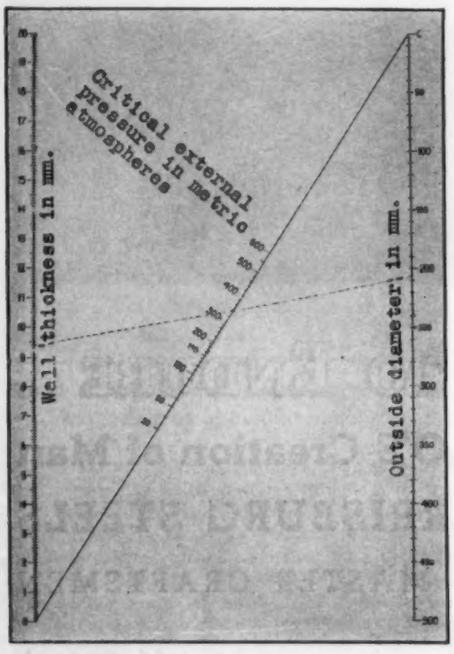



*Fig. 3 — Nomographic chart suitable for tubular materials having a yield-point of 64,000 pounds per square inch. For an 8⅛-inch A.P.I. casing with an outside diameter of 206.375 mm. and a wall thickness of 9.398 mm. the critical external pressure amounts to 339 metric atmospheres.*

valuable in estimating the critical external pressure. Some examples are stated below for the proper interpretation of the diagram:

1. If an 8⅛-inch A.P.I. casing has an outside diameter (D) of 206.375 mm., a wall thickness (t) of 9.398 mm., find the critical external pressure for a number of different materials.

The ratio $\frac{t}{D}$, being decisive for the critical external pressure, will read in this case:

$$\frac{t}{D} = \frac{0.9398 \text{ cm.}}{20.6375 \text{ cm.}} = 0.045$$

If in Figure 1 a perpendicular is plotted at $\frac{t}{D} = 0.045$, the critical external pressure lies at those points, where this line intersects those representing the various materials, i.e.:

For a material with a yield point of 3,500 kg/sq.cm., the critical external pressure is 264 metric atmospheres.
For a material with a yield point of 4,000 kg/sq.cm., the critical external pressure is 302 metric atmospheres.
For a material with a yield point of 4,500 kg/sq.cm., the critical external pressure is 339 metric atmospheres.
For a material with a yield point of 5,000 kg/sq.cm., the critical external pressure is 364 metric atmospheres.

2. Basing upon a given depth of the well at a given specific gravity of the mud, the critical external pressure is fixed at 400 (metric) atmospheres. What is the thickness of wall of a 5¾-inch A.P.I. casing, if the material possesses a yield point of 50,000 pounds per square inch?

A horizontal line is drawn at $P_k = 400$ atmospheres to the mark line representing the material with the said yield point, and from here the curve is drawn downwards vertically and $\frac{t}{D}$ found to be 0.06; since D = 5¾ inches equal to 14.605 cm., $t = 0.06 \times 14.605 = 0.875$ cm.

The examples outlined above can be calculated just as easily by using the accompanying diagram shown in Figure 2 and Figure 3. Each graph includes an example, so that detailed instructions should not be necessary.

In order to establish the reliability of the two revised formulas (2) and (3), a series of tests were run by the Mannesmannrohren-Werke.

Relationship between calculated critical external pressure and test result:

(a) 8⅝-inch A.P.I. casing, 38 lbs./ft.
D = 219.1 mm.
t = 10.8 mm.
Yield point of the material used for the experimental tube
t = 65,500 lbs./sq. in.

$$\text{Calculus: } P_k = 4{,}600\,(2.63\,\frac{1.08}{21.91} - 0.043) = 398 \text{ at.}$$

Test: 375 (metric) atmospheres.

(b) 6⅝-inch A.P.I. casing, 28 lbs./sq. ft.
D = 168.3 mm.
t = 10.6 mm.
Yield point of the material used for the experimental tube
t = 70,000 lbs./sq. in.

$$\text{Calculus: } P_k = 4{,}950\,(2.63\,\frac{1.06}{16.83} - 0.043) = 607 \text{ at.}$$

Test: 620 (metric) atmospheres.

A formula derived from empirical data will not correspond exactly to the test values obtained. However, the calculation, although approximate, will render satisfactory service for deep drilling in as much as the rating of the critical external pressure range is of much greater importance than its exact determination, the more so because bore forces sometimes appear which, like a mountainous pressure, cannot be predetermined.

## California Tax Collections Rise

Gasoline sales to California motorists continued to gain during December to achieve a new high in the annual income from this source as assessed by the State Board of Equalization. Board records show that the December assessments amounted to $4,329,119, a gain of 4.71 per cent over the same month of the previous year. The tax was assessed for the month against a sale of 144,303,973 gallons of gasoline.

The December assessments brought the total for the year up to $51,584,003, the first time in the history of the state that the annual income from this source has exceeded $50,000,000. The previous year high was recorded in 1936 when the total assessment roll against oil companies amounted to slightly more than $48,000,000. The 1937 total was 6.81 per cent greater than the assessments reported for the previous year.

"It would appear from these figures that California has achieved a substantial economic balance," said Richard E. Collins, chairman of the board. "It is understood generally that gasoline sales may be taken as a fairly accurate barometer of economic conditions. In view of this, last year's gasoline tax assessments would indicate a healthy condition throughout the state."

The 10 oil companies reporting the highest sales in December were listed by the board as follows, the explanation for the difference between the total and taxable sales being given as due to resale of gasoline previously taxed and exempt sales to the federal government or interstate commerce:

| | Actual gallonage | Net taxable gallonage |
|---|---|---|
| General Pet. Corp. of Calif. | 31,018,699 | 10,693,158 |
| Gilmore Oil Co. | 6,431,551 | 82,111 |
| Richfield Oil Corp. | 15,794,380 | 13,220,378 |
| Shell Oil Co. | 22,742,489 | 16,471,234 |
| Signal Oil Co. | 5,447,589 | 950 |
| Standard Oil Co. of Calif. | 40,603,459 | 24,707,196 |
| Texas Co. | 9,614,445 | 8,638,688 |
| Tide Water Associated Oil Co. | 22,446,108 | 14,925,981 |
| Union Oil Co. of Calif. | 19,732,582 | 11,443,926 |
| Wilshire Oil Co., Inc. | 8,199,473 | 7,953,383 |

## New Special-Type Barges for Transportation Company

The John I. Hay Co., Chicago, Ill., has added four new special-type barges to the fleet which it operates on the Mississippi and Illinois rivers, principally between Chicago and St. Louis. The new barges are of combined tank and cargo type, are 180 feet long by 38 feet wide and have a capacity of 1,000 tons on a 7½-foot draft. These barges were built by the Chicago Bridge & Iron Co. at the

*First of the four pressure-type barges unloading fuel oil at Riverdale, Ill.*

Hay company's yard at Seneca, Ill. The first one was launched in November, 1937, and the fourth was launched this month.

The barges are unique in that the lower or tank section is built of a series of cylinders which are designed to withstand sufficient internal pressure to prevent evaporation loss that would otherwise occur while cargoes are in transit. The cylinders are divided into six compartments, each compartment having swash bulkheads every 40 feet and is equipped with complete valves and fittings. The compartments are designed for 15 pounds per square inch pressure but at present are being operated with the valves set at 5 pounds.

The tops of the cylindrical tank sections are flattened and, together with intermediate floor sections, form a level cargo deck. This deck is surrounded by a welded plate railing with a division at the center. The barges are of welded plate construction throughout.

# Petroleum Waxes

*(Continued from Page 32)*

writer as a property resulting from a combination of tensile strength and slight ductility. According to this conception, the scale waxes would possess no toughness whatever, the fully refined products beginning to show signs of possessing this property and some of the amorphous waxes being distinctly so.

## Blocking

The sticking together of waxed sheets, usually described as "blocking," is very important from the practical standpoint. Blocking troubles are encountered only in the case of the "wet waxed" sheets, that is, those having an appreciable wax film on the surface. It is important to remember that the blocking is affected by the thickness of the surface film, the thicker the film, the greater the blocking. The blocking tendencies of wax usually decrease with increase of melting point of the wax but not always—sometimes a wax of higher melting point will cause more blocking than one of lower melting point. The reason for this anomaly is to be traced to imperfections in refining. However, almost any wax will block in excessively hot weather unless precautions are taken to prevent it. The successful practice at the present time to prevent blocking of waxed paper during the hot weather is to keep the paper from becoming too hot during the rewinding and slitting, and during the subsequent storage and transportation. Refrigerated cars and trucks are quite universally used for transportation during the hot season.

Methods of measuring blocking tendencies of waxed paper are both qualitative and quantitative. Sometimes a stack of the sheets are weighted down in an oven, the temperature raised by degrees and held for a length of time after each increase, then determining at what temperature the blocking becomes severe. A quantitative method is to superimpose surfaces of waxed sheets, weigh down in an oven at a definite temperature, cooling and pull the strips apart in a tensile machine.

## Sealing Strength

It has been mentioned previously that when the tensile strength exceeds 160 pounds to the square inch at 70° F., the wax begins to acquire sealing properties on a wet waxed sheet. In connection with this property it is important to stress that the effectiveness of sealing is influenced by several factors besides the quality of the wax, and has given rise to confusion. For example, two manufacturers of waxed paper, using the same high tensile wax, have been known to secure quite variable results, one reporting satisfactory sealing and the other poor sealing. This divergence may be due to differences in the quality of the paper used, method of waxing the paper, performance of the wrapping machines in the bakeries, or softness and shape of the bread or other article being wrapped.

Prior to about 1932-1933, paper used for bread wrapper was usually a straight sulfite sheet. At this time the opaque sheet, which is a sulfite sheet filled with titanium oxide, began to come into use with the result that many sealing troubles were encountered, but these were overcome gradually until now many manufacturers of waxed paper report as good results with the titanium oxide filled sheet as the straight sulfite sheet. Not only have they improved the quality of the paper, but have varied the waxing methods for better results and worked closely with the bakeries to secure optimum operating conditions on wrapping (and sealing) machines. Oil refineries, during this period, also have made contributions in raising the sealing strength of the wax, and, very important also, have given attention to the production of uniform quality.

The quantitative determination of sealing strength frequently is carried out in the laboratory by sealing together two strips of the paper by heating and cooling, then measuring the force necessary to peel the two sheets apart. While this test may be useful in many cases, it is misleading at times, and after all, the only certain method of evaluation is to wax paper in the commercial size machines and then to test the rolls on the wrapping machines in the bakery.

## Gloss

The sweated waxes have the property of acquiring excellent gloss under proper manipulation. Within limits, this gloss is better for the higher melting points and when the film on the surface is thicker. In the making of waxed paper, the gloss develops when the molten film is cooled rapidly at a certain point, just before the surface begins to dull. Two methods are used commercially, one being to pass the paper over internally cooled rolls and the other by dipping in cold water; the last mentioned gives the best results but is not applicable to the transparent sheets.

The quantitative measurement of gloss is not satisfactory when using an instrument of the Ingersoll type. As pointed out by Bissel,[36] while the Ingersoll glarimeter does quite well for unwaxed paper, the angle of polarization of specularly polarized light varies with the refractive index, and it may happen that a very glossy waxed paper may read low because the refractive index of the wax is lower than the paper and because the specularly reflected light is not entirely polarized.

## Other Properties of Waxes

Since the users of wax frequently have need for data on physical properties, values collected from the literature are given here, but first a few words will be written in regard to melting points.

Petroleum waxes solidify throughout a range of several degrees so that melting point represents, say, a temperature where the wax begins to form a solid phase (as in the case of the A.M.P. or American melting point) or a point which is represented as an average mean, or resulting from the solidification of the main portion of the wax, as exemplified by an arrest point on a time-temperature curve. This last mentioned principle is the basis for the A.S.T.M. method (D 87-22) which is the standard method to be used for sweated waxes in case of dispute. This value also is known as the E.M.P. or English melting point. The A.M.P. is seldom found by actual determination but is taken as being 3° F. higher than the E.M.P. The melting point of the plastic waxes frequently is taken by the drop method (A.S.T.M. D 27-30), or some modification. The Dennis[37] method of the heated bar has been found useful in research laboratories, as a method applicable to waxes as a whole.

**Specific Heat.** That of hexadecane at 19° C. is given as 0.495[15]; 125° F. melting point wax is given as 0.57 at 126° F., 0.5789 at 155° F., 0.5974 at 176° F. and 0.6307 at 212° F. by Bushong and Knight[16].

**Heat of Solution.** On heat content of wax, effective heat of wax in solution, and heat of solution, see Thermal Properties of Petroleum Products, Misc. Pub. Bureau Standards No. 97. Sullivan, McGill and French[19] give 72.5 b.t.u. per pound for the wax found in Mid-Continent wax distillate; Kozicki and Pilat[20] give 70 b.t.u. per pound for 126° F. melting point and 78.9 for 149.6° F. melting point.

**Thermal Conductivity.** Cal/sec/cu cm/degree C Temp difference, is given for paraffin as 0.0006 at ordinary temperatures and 0.00023 at 0.°C[12].

**Dielectric Strength.** Solid wax 109° F. melting point is 350, and 158° F. melting point is given as 450 in potential to puncture in kilovolts per centimeter[25].

**Heat of Fusion.** Data predicted by Parks and Todd[21] for normal paraffins as follows: $C_{21}H_{44}$, mp 22.5°C, equals 50.8 calories/gm: $C_{28}H_{58}$, mp 53.3° C. equals 53.3; $C_{36}H_{74}$ mp 71.1° C. equals 54.1.

**Index of Refraction.** Page 8 states that the mean value is comparable with that of isotropic materials. Data from page as follows:

$$N = \frac{2\,No + Ne}{3} = \text{mean}$$

value. No equals ordinary index and Ne equals extraordinary value. Temperature 77° F.; N for 121° F. mp equals 1.5009; 126° F. equals 1.5113; 131° F. equals 1.5114; 136° F. equals 1.5157; 141° F. mp equals 1.5174. On index of refraction determinations of wax and values for dicetyl see also West.[26]

**Specific Gravity.** For a graph showing specific gravities of waxes in liquid and solid states, reference is made to Page 8; see also Morris and Adkins.[22]

**Contraction upon Solidification.** 15 to 17 per cent, according to Carpenter.[24]

**Solubility.** On Solubility of waxes in various solvents, reference is made to Poole and collaborators,[23] Carlisle and Devine,[26] Smith[27], Sullivan, McGill and French,[28] Henderson and Ferris,[29] Wyant and Marsh,[30] and Weber and Dunlap.[31]

**Resistivity.** Volume resistivity in ohms/cm.[18] Paraffin wax (parawax) equals $1 \times 10.^{16}$

## Uses of Petroleum Wax

Some of the important uses are as follows:

*"Wet" and "dry waxed" paper and cardboard.* Included under this heading are the wrappers for bread and cake, lunch roll, bags, butcher's paper, etc.; these may be opaque or transparent. Under cardboard products are butter and ice cream cartons, and cups for cottage cheese, jellies and other foods.

*Wax size.* Internal and surface sizing for paper and cardboard.[33]

*Drinking cups.* Wet and dry waxed, also surface sized.

*Candles.*

*Artificial flowers, wax figures.*

*Vat linings.*

*Coatings for plants, shrubs and trees,* especially during and just after transplanting.

*Tailor's chalk.*

*Polishes.*[32]

*Pharmaceuticals and toilet preparations.*

*Protective paints and varnishes.*

*Protective coating for burns.*

*Lining for beer cans.*

*Ironing wax and sealing wax.*

*Coatings for cheese, fruits, vegetables and meats.*

*Electrical insulation.*

*Filler for leather, textile yarns, and plant fibers.*

*Waxed paper milk containers.*

*Paper caps for milk bottles.*

*Electrotyping.*

*Match wax.*

*Cartridges.*

*Wood filler.*

*Rust inhibitors.*

Some of the uses in the list are comparatively new, or have become accelerated in recent years. Among these may be mentioned particularly the coating of fruits and vegetables, waxed paper (and cardboard) milk containers, lining for beer cans, paper sizing,[35] and coatings for plants and trees.

## Waxing of Fruits

Some very interesting results are being secured in the waxing of fruits and vegetables for the market, primarily to reduce moisture loss and shrinkage. It has been found that the wax also tends to inhibit decay and in some cases it is reported that the use of refrigerated cars can be eliminated in shipment; frequently the product can be picked later and will possess more of the flavor of the naturally ripened article. The least complicated method of waxing is to dip wire baskets filled with the product into molten wax and hold up to drain. No doubt also, emulsions can be applied in a manner which is not too complicated. The waxing of fruits on the Pacific Coast often is carried out in quite an extensive plant, in the case of oranges the product first passing through a bath of water containing borax to inhibit mold, washing, drying, then moving between opposing rows of brushes in a fine spray of wax. In Oregon, wax emulsions have been tried on apples and good results are claimed. Fruits and vegetables mentioned as having been successfully coated, or promising good results, are oranges, lemons, apples, cantaloupes, rutabagas, turnips, tomatoes, peppers, eggplant and peaches.

In the making of waxed paper milk containers,

it has been found that certain of the fully refined waxes are satisfactory and it is unlikely that specially compounded products will be necessary for this service. Future developments in this article will witness changes in design and rigidity. There has been considerable acceleration in the use of waxed paper milk containers in recent years and it is probable that the utilization will be much further extended.

Wax sizing for paper is of two types. One consists of a mixture of rosin and wax, known as internal size, and is added as an emulsion to the pulp in the beaters. The product used for surface sizing usually is a straight wax emulsion applied after the paper or cardboard is made. The wax used for lining beer cans is the plastic variety which retains toughness at a low temperature. Wax coatings for plants and trees are applied as emulsions by spraying.

## Conclusion

In conclusion, some of the operations occurring in the fabrication of waxed paper will be described and commented upon. Waxed bread wrapper, which is the most important of all the waxed papers, is a sheet weighing 23 to 25 pounds to the ream and is waxed up to 33 to 36 pounds to the ream. The sheet is first printed and during this operation usually is waxed lightly on one side to prevent offsetting by the ink. After the ink has dried the roll is taken to the machine where the final waxing is done. The sheet passes first into the molten wax (temperature 150° to 180° F.), then through two heated squeeze rolls, one covered with rubber, which regulate the amount of wax left on the paper; next past small buffing rolls and then into cold water (35° to 55° F.) where the wax is solidified. Before the rewinding of the sheet, it passes between rubber scrapers and past suction orifices to remove water. Prior to shipment, the large rolls of paper are cut to proper size and rewound, all in the same operation. This breadwrapper paper is a typical "wet waxed" sheet, that is, part of the wax, sometimes 30 to 40 per cent, is surface wax and can be scraped off.

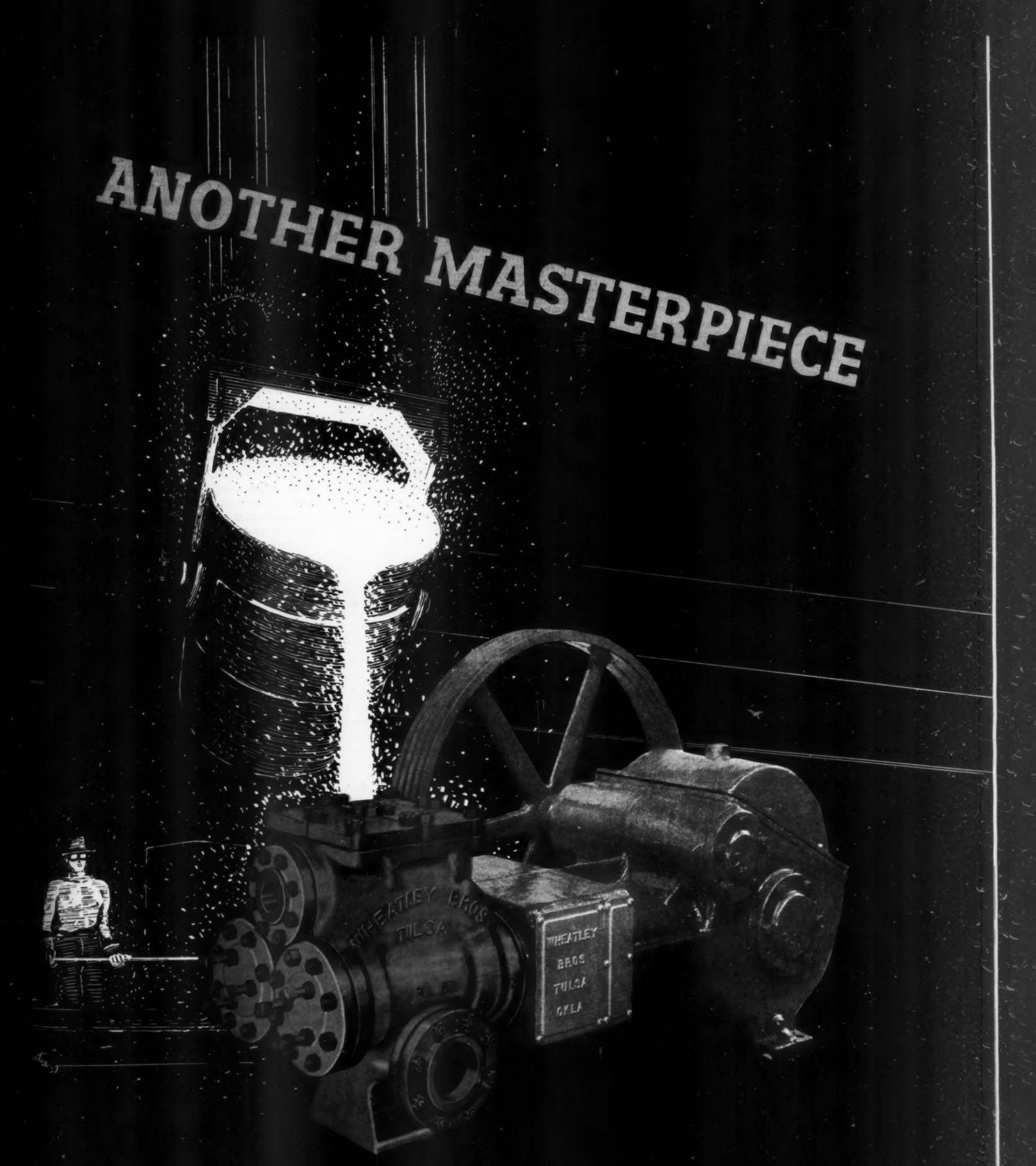
The preparation of a "dry waxed" sheet, one in which the wax has soaked completely into the fibers of the paper, is exemplified in some types of butcher's paper. It is necessary to apply only sufficient wax that an excess over that required to saturate the fibers, is not present. This is done from rolls in one way or another, and the paper then is wound up hot to permit the wax to distribute uniformly. The wax applied to the paper is at a temperature of 180° to 200° F. This sheet will contain 18 to 25 per cent wax.

The waxing of cartons is often carried out in such a manner that almost all the wax remains on the surface. The cartons, cut but not folded, go through the wax bath, squeeze roll, then cold water bath, with such extreme rapidity that there is little time for the wax to soak into the board. These products often possess a total of 10 to 12 per cent wax.

Transparent waxed paper made from sulfite sheet, often is fabricated in two operations. The paper is passed through a bath of molten wax and then wound up hot in an enclosed space to let the wax soak in. The roll then is transferred to another machine where the sheet passes through the molten wax, squeeze rolls, and lastly over the chilling rolls before rewinding. The speed of the sheet, also the temperature of the rolls, must be regulated carefully so that optimum results as regards transparency and gloss, are secured. In waxing glassine stock, the preliminary soaking operation often is eliminated. The transparent sheets may possess 12 to 23 per cent wax.

The speed of the sheet in the above mentioned

# ANOTHER MASTERPIECE

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operations may vary from a few hundred up to a thousand feet per minute, the greatest being possible in the case where the paper is ducked in cold water to solidify the wax.

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# Causes of Steel Embrittlement by Boiler Waters Studied

The following excerpt is from the annual report of the Nonmetals Division of the Bureau of Mines for the fiscal year 1937 (I.C. 6974):

Water is one of our most important nonmetallic mineral substances, and, while the total money spent on water may be less than that spent on oil, water is the more widely used. Boiler explosions, due to a variety of causes among which is the "embrittlement" of the boiler steel by certain waters used, present an important field for research on water treatment and preparation.

As a result of work carried out at New Brunswick during 1935-1936, it was found that cracking could not be produced at 250° C. by sodium hydroxide solutions alone but that the solution must also contain a little sodium silicate. This discovery was so important that there was a tendency to assume that if the action of these solutions were thoroughly investigated it would be possible to correlate all the experimental and operating facts concerning embrittlement. The investigators tended to make the same assumption themselves. After the action of these solutions had been studied about six months, many observations could readily be correlated and fitted into a definite picture, but a few slight discrepancies still existed. Fortunately, at this time one of the test bombs developed a crack of a very peculiar nature and sharply focused attention on these discrepancies.

An intensive study then revealed that not one or two solutions or mixtures such as sodium hydroxide and sodium silicate produced cracking but that a whole series were capable of producing the same result. The exact compounds and concentrations depended on the temperature and other experimental conditions. The accompanying table lists a number of compounds that will produce intercrystalline cracking in concentrated sodium hydroxide solutions boiling under atmospheric pressure and in solutions held at 250° C.

A solution of 50 grams of sodium hydroxide per 100 grams of water which contains lead oxide and boils under atmospheric pressure has been found very effective. It also lends itself well to use in the study of protective action of various compounds. At 250° C. the sodium hydroxide-sodium silicate solution still remains the one most active in producing cracks.

| 50 g. of NaOH per 100 g. $H_2O$ boiling at atmospheric pressure | | 25 g. of NaOH per 100 g. $H_2O$ at 250° C. | |
|---|---|---|---|
| Chemical— | Concentration, g./100 g. $H_2O$ | Chemical— | Concentration, g./100 g. $H_2O$ |
| $KMnO_4$ | .02 | $Na_2SiO_3$ | 0 1-1 0 or more |
| $NaNO_3$ | 2 | $TiO_2$ | 5 |
| $Na_2CrO_4$ | .05- 2 | $GeO_2$ | 3 |
| PbO | .2 | $SbCl_3$ | 3 |

The sensitivity of the reactions is indicated by the fact that the various agents in the table that produce intercrystalline cracking at the boiling point will completely stop cracking at 250° C. Furthermore, if two of the compounds that produce embrittlement are mixed at the atmospheric boiling point, one of them will prevent the action of the other. For example, enough sodium chromate will prevent the production of intercrystalline cracks with lead oxide. This sensitivity appears to be related to the oxidizing or film-forming characteristic of these agents on the surface of the steel.

Furthermore, other substances may be substituted for the sodium hydroxide. For example, a sodium nitrate-manganese chloride solution will start cracks in specimens of cold-rolled steel within one hour after they are immersed in the solution and will crack a five-sixteenth inch section of boiler flange steel within a half day.

As a result of the experimental work a theory has been developed which fairly well correlates the known facts. The mechanism involves formation of a protective layer on the steel which is not continuous enough to prevent the solution from attacking the grain boundaries. Such a coating may also be cathodic to the exposed or anodic grain boundaries, and electro-chemical action will accelerate or increase the attack. In sodium hydroxide-sodium silicate solutions the silica has actually been found to deposit on the surface of the steel at 250° C. A solution that will cause intercrystalline cracking at this temperature will not necessarily produce the same effect at some different temperature, as the film-forming characteristics of the sodium silicate may change or the corrosive effect of the sodium hydroxide may change. Similarly, the agents that produce intercrystalline cracking at the atmospheric boiling point will not necessarily do so at 250° C. owing to the different oxidizing or film-forming action which they may exert at the higher temperature.

These new results and their explanation have broad and important implications with respect to the production of intercrystalline cracks in boilers. First, not only one solution but a variety of solutions of different compositions may promote failure. Secondly, as the reactions may be started or stopped by surface conditions, on the steel they will obviously be extremely sensitive to small changes. For example, a boiler operating with little dissolved oxygen may not encounter trouble until the concentration is allowed to increase and possibly form a film that will promote intercrystalline attack. On the other hand, if the oxygen increases still further the attack may be stopped. Oxygen is merely used as an example; salts such as nitrate, silicate, etc., play an important part. This sensitivity to changes in conditions gives the study somewhat the complexity of the corrosion problem, and indeed in a number of aspects similarities are indicated. Third, since temperature and solution conditions must be accurately adjusted to produce cracking, it may occur only intermittently in a boiler. If this is true, water taken from a boiler after cracking will not necessarily indicate the conditions that produce intercrystalline failure. Fourth, some substances which are used to prevent cracking do so by changing or producing new surface film on the steel, especially over the grain boundaries. Under certain conditions protection is effective, yet the very formation of a film may promote intercrystalline cracking if the conditions are changed. Fifth, the results show definitely that it is not necessary to have an applied load to produce cracking. The internal stresses resulting from cold work or other treatment will allow the solutions to attack the steel. Sixth, neither repeated stress nor corrosion fatigue necessarily play a part in the production of this type of failure.

With the complete study that has now been made of the production of intercrystalline cracks, it is possible to investigate adequately various compounds that may prevent this difficulty.

It has been believed for a number of years that in boiler operation certain concentrations of sodium sulfate would inhibit the action of the solutions. This salt frequently has proved a satisfactory preventive in stationary boilers, but it has been found to be distinctly unsatisfactory in locomotive boilers. Experimental studies have determined the influence of sodium sulfate in various solutions and at different temperatures; it offers protection only under limited conditions.

As previously mentioned, certain oxidizing compounds such as sodium chromate and sodium nitrate will prevent the intercrystalline attack of sodium hydroxide-sodium silicate solutions, but these compounds may create cracking if conditions are changed or if they are present in too low concentrations. While oxidizing agents may be used to prevent embrittlement in boilers, their addition to the feedwater would be dangerous owing to possible production of intercrystalline cracks and acceleration of corrosion or pitting. One or two inorganic chemicals have been found to offer some protection against embrittlement, but two groups of organic chemicals are much more effective. Fortunately, these organic chemicals are extremely low in price and are sometimes waste products so their use in boilers would not be attended by economic difficulties.

# Progress in METALS

By W. L. NELSON

## Typical Low-Alloy Steels

The outstanding properties of the low-alloy steels are their relative cheapness, high strength properties and resistance to mild or atmospheric corrosion. These claims of superiority are not spectacular ones but the vast applicability of these steels makes even small advantages tremendously important. In general, the weight of structures and machines can be cut by 30 or 40 per cent by the use of strong low-alloy steels; the corrosion resistance of these steels, when exposed to atmospheric rusting, to refinery and industrial fumes and to saltwater atmospheres, ranges from two to six times the resistance of carbon steel; and the cost is usually not more than 40 or 50 per cent higher than the cost of regular mild steel and in some simple applications is no higher in price than carbon steel. The first obvious application of these steels was for transportation equipment. The automotive industry was the first to use low-alloy steels in large amounts and it continues to be one of the major purchasers. Likewise, railway and trucking equipment is fast adopting alloy steels with the result that the dead-load that is being handled by trains and trucks is rapidly decreasing. These were attractive fields for development because the advantage of light weight results in a smaller engine, lighter tires and brakes, and in decreased fuel consumption.

*Composition*—The first steels to be widely used were the nickel steels and copper steels and even today these elements are the most widely used. They are both solution forming elements and thus tend to increase the ductility or ease of fabrication—or permit higher strength steels without sacrificing ductility. However, other elements such as chromium, silicon, manganese, molybdenum and vanadium are being used extensively for special services. Chromium adds definitely to the corrosion resistance and strength and although the properties of the silicon and manganese steels are not particularly outstanding they are very valuable elements because they are relatively cheap. Table 1 is a summary of the compositions of some of the most common low-alloy steels. This table was taken from a paper by Edwin F. Cone entitled "Carbon and Low-Alloy Steels," which was presented before the A.S.T.M. in Pittsburgh, March 4, 1936.

*Petroleum Applications*—The wide usefulness of the low-alloy steels makes them suitable for almost all of the services encountered in refinery or oil field developments except conditions of severe corrosion or other highly specialized services and hence a list of the applications to the petroleum industry would only be a list of all of the uses of steel. However, the paper by Cone contains definite references to petroleum applications and these are listed below as quotations:

*Sucker Rods*—"These steels in the very low carbon ranges and the plain nickel steels (more properly called nickel-ingot irons) have been widely used in sucker rods in the oil industry, where they are required to resist corrosion fatigue in contact with saline underground waters." The steels referred to are S.A.E. 2115, those with 2 per cent or 2.5 per cent of nickel, S.A.E. 2300 and annealed S.A.E. 3130.

*Low Temperatures*—"These steels (author—2 to 2.5 per cent) like the higher nickel steels of the S.A.E. No. 2300 series, retain their toughness at subatmospheric temperatures to a much greater degree than do the usual unalloyed constructional steels, which accounts in part for their applications in welded pressure vessels, piping and auxiliary equipment in oil refineries for low-temperature dewaxing of oils."

*Reaction Chambers*—"It has found (author—chrome vanadium S.A.E. 6120 steel) its principal use in the as-rolled condition as plates electrically welded for transporting gases under pressure, and as electrically welded reaction chambers for chemical and oil industries."

*Oil Tankers*—"From the study of a number of tests of samples (author—Cromansil steel) exposed to the atmosphere, to sea water, to oil and gasoline in oil tankers, and to the action of mild chemicals in a chemical plant, the loss by corrosion was somewhat less than the loss of plain carbon steels under the same conditions. It (author—Cromansil), is however, now available with copper."

*Oil Well Casing*—"The largest tonnages of this steel (author—Cromansil) have been used in the oil industry where many thousands of tons exist in the form of high-strength oil well casing."

*Plate*—"Plates of manganese-vanadium steels have been applied with considerable satisfaction in the railroad and marine fields as well as in the oil and chemical industries."

*Low Temperatures*—"Cor-Ten and Man-Ten are stated to possess high impact values, particularly the former, at both high and low temperatures—below zero."

*Trucks*—"These Republic steels (author—R.D.S. Grades 1 and 1a) have been incorporated in various types of trucks and freight cars for such companies as the Sun Oil Co., Holt Oil Co., Edgefield Coal Co., and Baltimore & Ohio, Delaware & Hudson and Wabash railroads."

*Oil Trucks*—"Most of the applications of the Granite City steels (author—H.S.1 and 1A) are in the transportation field and include truck bodies, oil trucks, trailers and other similar equipment."

The paper by Edwin F. Cone, from which the quotations are taken, may be obtained in the "Symposium on High-Strength Constructional Metals" published by the A.S.T.M., Philadelphia, Pa.

## Short-Time High-Temperature Strength of Metals

Abstract—"A New Application for the Short-Time High Temperature Tensile Test" by Clark, White, and Guarnieri, before the annual convention of the American Society for Metals, Atlantic City, Oct. 18-22, 1937.

More and more attention is being given to the development of shorter methods of determining the high-temperature strength of metals rather than to continue to use the cumbersome and tedious creep-strength test procedures. The proposed method of interpreting regular short-time tensile strength tests conducted at high temperatures, as introduced in this paper is the first real indication of a workable relationship between this test and creep strength data although the authors voice a caution regarding the use of the method until more complete data are available.

Figure 1-A is a correlation of creep strength (0.1 per cent and 0.01 per cent in 1,000 hours) at 1,000° F. for four different materials, plotted against the so-called critical temperatures of these materials. The critical temperatures are obtained from short-time tensile strength tests as indicated in Figure 1-B. Thus, the critical temperature may be determined by conducting short-time tensile tests at several temperatures and maintaining either a constant rate of elongation or a constant time for rupture in each of the tests.

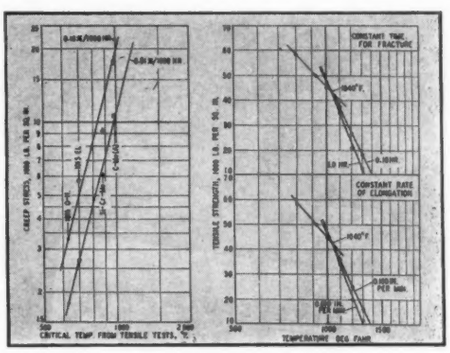


*Fig. 1-A (left)—Critical temperature versus creep strength at 1,000° F. Fig. 1-B—Tensile strength versus temperature for C-Mo (B).*

**TABLE 1—CARBON AND LOW-ALLOY STEELS**

Range of Percentage Composition Reported by Companies

| Type— | Carbon, per cent | Manganese, per cent | Silicon, per cent | Copper, per cent | Nickel, per cent | Molybdenum per cent | Other Elements per cent |
|---|---|---|---|---|---|---|---|
| **Carbon steels:** | | | | | | | |
| S.A.E. No. 1030 | 0.25–0.35 | 0.50–0.80 | ..... | ..... | ..... | ..... | ..... |
| S.A.E. No. 1015 | 0.10–0.20 | 0.30–0.60 | ..... | ..... | ..... | ..... | ..... |
| **Early steels:** | | | | | | | |
| S.A.E. No. 2115 | 0.10 | 0.30 | 0.15 | ..... | 1.25 | ..... | ..... |
| 2 to 2.5 per cent nickel | 0.20 | 0.60 | 0.30 | ..... | 1.75 | ..... | ..... |
| | 0.20 | 0.40 | ..... | ..... | †2.00 | ..... | ..... |
| | 0.20 | 0.80 | ..... | ..... | †2.00 | ..... | ..... |
| S.A.E. No. 2300 | *0.45 | ..... | ..... | ..... | 3.50 | ..... | ..... |
| S.A.E. No. 3130 | 0.25–0.35 | 0.50–0.80 | ..... | ..... | 1.0–1.5 | ..... | 0.45–0.75 Cr |
| S.A.E. No. 3115 | 0.10–0.20 | 0.30–0.60 | ..... | ..... | 1.0–1.5 | ..... | 0.45–0.75 Cr |
| S.A.E. No. 4615 | 0.10–0.20 | 0.30–0.60 | ..... | ..... | 1.5–2.0 | 0.20–0.30 | ..... |
| Medium Mn | 0.20–0.25 | 1.00–1.75 | ..... | ..... | ..... | ..... | ..... |
| Sil Struct. | 0.30–0.40 | 0.70–0.90 | 0.20–0.30 | ..... | ..... | ..... | ..... |
| Cr-V | 0.15–0.25 | 0.50–0.80 | ..... | ..... | ..... | ..... | §0.80–1.10 Cr |
| Cromansil | ..... | 1.00–1.40 | 0.60–0.90 | (‡) | ..... | ..... | 0.40–0.60 Cr |
| Mn-V | 0.13–0.18 | 1.20–1.45 | 0.15–0.25 | ..... | ..... | ..... | 0.09–0.12 V |
| C-Mo | 0.08–0.15 | 0.70–0.90 | 0.20–0.30 | ‡0.20 | ..... | 0.20–0.30 | ..... |
| Mn-Mo | 0.10–0.20 | 1.20–1.40 | 0.20–0.30 | ‡0.20 | ..... | 0.20–0.30 | ..... |
| **Steel companies' steels:** | | | | | | | |
| Cor-Ten | 0.10 | 0.10–0.30 | 0.50–1.00 | 0.30–0.50 | ..... | ..... | 0.50–1.5 Cr |
| Man-Ten | *0.35 | 1.25–1.70 | 0.10–0.30 | 0.01–0.25 | ..... | 0.00–0.40 | 0.00–0.20 V |
| Sil-Ten | 0.20–0.40 | 0.40–0.80 | †0.20 | 0.01–0.25 | ..... | ..... | ..... |
| Yoloy | 0.08–0.22 | ..... | ..... | 1.0 | 2.0 | ..... | ..... |
| RDS-1 | *0.12 | *1.00 | ..... | 0.5 –1.5 | 0.5 –1.0 | *0.20 | ..... |
| RDS-1A | *0.30 | *1.00 | ..... | 0.5 –1.5 | 0.5 –1.0 | *0.20 | ..... |
| Hi-Steel | *0.12 | 0.50–0.70 | *0.30 | 0.9 –1.25 | 0.45–0.65 | ..... | ..... |
| HT-50 | *0.12 | 0.15–0.90 | Trace | 0.30–0.80 | 0.30–0.80 | 0.05–0.25 | ..... |
| AW 70-90A / AW 70-90B | *0.25 | *0.75 | *0.25 | 0.30–0.50 | *0.25 | ..... | *0.25 Cr |
| Jal-Ten | *0.35 | 1.25–1.75 | *0.30 | †0.40 | ..... | ..... | ..... |
| Granite City HS 1 | 0.14 | 0.70–0.90 | 0.15–0.20 | 0.25–0.30 | ..... | ..... | 0.12 Cr |
| Granite City HS 2 | 0.20–0.30 | 1.20–1.60 | 0.15–0.20 | 0.25–0.30 | ..... | ..... | 0.12 Cr |
| Centralloy | 0.08–0.30 | 0.60–0.90 | *0.50 | 0.40–0.60 | *0.25 | Yes | *0.25 Cr |
| Konik | ..... | ..... | ..... | 0,10–0.30 | 0.20–0.50 | ..... | 0.07–0.30 Cr |

*Maximum. †Minimum. ‡Optional. §Also contains 0.15 V.

# "CATERPILLAR" DIESELS

# ON SLUSH

**1 DIGGING SLUSH PITS**

A "Caterpillar" R5 Tractor, equipped with a LaPlant-Choate bulldozer, digging slush pit for oil well near Silica, Kansas. A ripper is also used where extra-hard subsoil is encountered. Outfit is capable of digging two 100x20x5 pits per eight hours.

**2 FILLING SLUSH PITS**

A "Caterpillar" Diesel D7 Tractor, equipped with LaPlant-Choate bulldozer, filling in slush pit in the new Corpus Christi field. Works 8 hours a day on 2½ gals. of 4c fuel per hour.

# DETAIL . . .

## SHOW THEIR STUFF

SLUSH requirements are a "necessary nuisance" associated with oil drilling that cannot be dodged. But the expense can be brought down very definitely —with low-cost "Caterpillar" Diesel power. . . . With a bulldozer-equipped "Caterpillar" track-type Tractor, digging slush pits is often only a matter of hours. Filling-in is similarly speedy and economical.

Yet this is but one of many oil-field chores these sturdy, agile, compact tractors handle—*better, quicker, cheaper*. They haul supplies—move and spot equipment—build pipe lines (with side-boom and back-filler equipment)—service wells (with winch equipment)—build and maintain roads (with blade graders). Thus they keep busy—saving money for their owners on every task.

And on stationary jobs—drilling, mud pumping, line pumping, lighting—there's nothing to equal the day-after-day efficiency and the low operating and maintenance cost of "Caterpillar" Diesel Engines.

"Caterpillar" sales, parts and service facilities are world-wide.

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**CATERPILLAR TRACTOR CO., PEORIA, ILL.**

# CATERPILLAR DIESEL POWER

REG. U.S. PAT. OFF.

**DIESEL ENGINES • TRACK-TYPE TRACTORS • ROAD MACHINERY**

**3 PULLING SLUSH TANK**

A "Caterpillar" Diesel D4 Tractor, equipped with winch, dragging a 50-barrel tank of slush over muddy ground. (Broad tracks mean sure footing; "Caterpillar" seals protect vital parts against mud and harmful abrasives.) Also used for general oil-well service. Uses 6 gals. of 4c fuel per 8 hrs.

# PROBLEMS FROM READERS

*Edited by L. G. E. Bignell*

## Depletion Deductions For Income Tax Reports

**In making federal income tax return there is allowed a charge for depletion equal to 27½ per cent of gross returns for oil sold. Is the amount chargeable for depletion limited to a certain per cent of the "Net Income"? If so, what is the per cent? And must the net income against which same is charged be net income from the oil business only?—H. B. H.**

An allowance or deduction of 27½ per cent of the gross returns secured from the sale of crude oil from an oil well is allowed. This deduction should be based upon the income received from the sale of oil and does not include any production still on the lease in storage tanks that has been taken out of the producing formation but not sold.

There is a limit of not over 50 per cent for depletion allowed from net income. Net income in this instance means all money received from all sources and does not limit income to that received from the sale of crude oil alone.

For details of the Federal Statutes on these regulations you are referred to page 77 of Regulation 94, Art. 23-M-4.

## Pumping High Paraffin Oils

**The grade of crude produced in Turner Valley has a paraffin content which, under low temperatures, may cause some difficulty in transporting it by pipe line. Tests made on the oil indicate that because of comparatively low ground temperatures (about 20° F. minimum) this particular oil might have to be dewaxed before pumping it through a pipe line. I would appreciate it if you could advise whether any such method has been used in the United States. I am aware that some difficulty has been experienced with pipe lines in this manner, but I have not heard that it has been overcome by dewaxing the oil before pumping.—W. M. A.**

In regard to the problem confronting you concerning the pumping of Turner Valley oil through pipe lines because of the high paraffin contents.

While I do not have detailed information about this particular oil upon which to base final decision I do know that other oils having high paraffin contents have been successfully handled in pipe lines without dewaxing.

When the Panhandle field in Texas was being developed it was found the oil had a tendency to congeal and pile up in a cone on the floor of the derrick where it fell from a small leak in the well-head connections. It was like cold molasses and could have been handled with a shovel.

Similar conditions were noted in the bottom of tanks and a pipe line engineer in charge of handling some of this oil out of that field was asked what provisions had been made to pump that heavy oil. He explained that they had purchased heavy pressure duty pumps and had anticipated the necessity of having to build up pressures to as high as 750 pounds per square inch to move the oil in the lines. When the oil was actually pumped through the lines it was found that only nominal pressures up to about 400 pounds were needed. The explanation lies in the fact that so long as the oil is stirred or kept in motion it will not congeal. The same thing will porbably apply to the west Canadian oil.

To check this theory your laboratory men might experiment with the crude and chill it but at the same time keep it in motion and note how much longer it takes to produce wax.

It is not to be implied that wax will not form in the pipe line for that is a normal condition. That wax is removed by the use of "go-devils" developed long ago when the pipe line industry was young. Recently pipe lines have been cleaned by pumping a plug of wax through the line without go-devil and that process was explained in the last pipe line edition of The Oil and Gas Journal, page 95, September 16, 1937.

## History and Use of Tool Joints

**I desire to find out what literature is available on tool joints, either in book or pamphlet form. I want to find out more about the history, manufacture and use of same.—E. H. B.**

While I know of no book or pamphlet that deals exclusively with tool joints and gives the history of their development, manufacturing process and use I do suggest that you secure a copy of J. E. Brantly's book, "Rotary Drilling Handbook."

In that book Mr. Brantly gives some information about the use of tool joints which may be of interest to you. He also covers the rotary drilling field quite fully and there should be other information of interest to you in this book.

For standard specifications of tool joints and manufacturing details it is suggested you write to Carl A. Young, secretary, American Petroleum Institute, 1508 Gulf States Building, Dallas, Tex., for copies of the A.P.I. standard specifications on tool joints. It is also possible that Mr. Young has other literature covering manufacturing details which will be of interest to you.

The tool joint used in rotary drilling is a development of the coupling commonly used to connect pipe. As the drill stems were made heavier it became necessary to increase the size and strength of the couplings needed to fasten the individual pieces of drill stem together. It was a natural development and it is probable that many manufacturers contributed to it so it would be rather difficult to trace the history of tool joints. It might be possible to refer to old catalogs of drilling equipment and in that way develop something of the changes through which the tool joints have passed but even such a search would not reveal much of historical interest.

## Signing an Oil Lease

**Kindly answer on your page the following question. Is the lessee required to sign form No. 88 with the lessor in making an oil lease?—A Reader.**

If form No. 88 is used in executing an oil lease it is not necessary for the lessee to sign the document because when the lessor has signed and delivered this lease to the lessee he has indicated he will perform certain things and when the lessee accepts the lease he indicates he is satisfied the lessor will perform those acts. When the lessor pays rental or bonus for such a lease it is further indication that the lessee is willing to accept the lease as signed by the lessor.

In the event the lease covers public land it is then necessary for the lessee to sign with the lessor. This covers the departmental form of lease.

There is a similarity between the lease executed on form No. 88 and a warrantee deed to a piece of real property. The seller must sign the warrantee deed and deliver it to the purchaser but it is not necessary for the buyer to sign the document because in accepting this form of deed the transfer of the property is acknowledged.

## Which Oil Will Cost the More?

**We desire to put oil in a hole we are drilling, believing water has a damaging effect on the formation. We are producing oil on two other leases, one of which we have to pay a one-eighth royalty and on the other a three-sixteenths royalty. The price would be the same regardless of which lease the oil came from, and can you please advise me if it would cost us more if we took the oil from the lease on which we had to pay three-sixteenths royalty considering all oil produced from both leases can be sold at the same price per barrel, regardless of whether it is sold to outside parties or sold to ourselves for drilling the well.—T. L. C.**

Let us assume you are going to fill a 100-bbl. tank at the drilling well with oil to be used for drilling-in purposes.

If this oil is taken from "A" well with one-eighth royalty 87.5 bbls. of oil will be pumped into the tank at the drilling well and 12.5 bbls. will be set aside for royalty interests.

If the oil is taken from "B" well with three-sixteenths royalty only 81.25 bbls. of oil will go to the tank at the drilling well and 18.75 bbls. to royalty interests.

This indicates that it will be necessary to secure more oil from "B" well than from "A" well to get the net 100 bbls. for the drilling well.

To determine the quantity of oil needed from either well:

Divide 100 by 87½ per cent for "A" well and it will be found that 114.286 bbls. of oil will be needed in order that 100 bbls. net may be secured.

Divide 100 by 81¼ per cent for "B" well and the answer is 123.077 bbls. of oil produced to secure 100 bbls. net.

The difference is 8.791 bbls. more oil required from "B" well than from "A" well to get the 100 net barrels needed for drilling in and if the cost of production and handling the oil from either well is the same it will be less costly to use oil from "A" well. If this oil is worth $1 per barrel there will be a saving of $8.791 on every 100 bbls. required for drilling-in purposes.

## Indexes of The Oil and Gas Journal

**If it will not entail too much work could you tell us which of the issues of The Oil and Gas Journal during the past 10 years contain the yearly index of the published articles so that we do not have to go through each and every issue?—C. H. A.**

The indexes published in The Oil and Gas Journal for the past several years are listed below:

| | |
|---|---|
| All of 1937 | Jan. 6, 1938, p. 113 |
| All of 1936 | Jan. 14, 1937, p. 119 |
| All of 1935 | Jan. 16, 1936, p. 105 |
| Last half of 1934 | Feb. 7, 1935, p. 49 |
| First half of 1934 | Aug. 16, 1934, p. 64 |
| Last half of 1933 | Mar. 8, 1934, p. 90 |
| First half of 1933 | Aug. 24, 1933, p. 75 |
| First half of 1932 | Aug. 11, 1932, p. 83 |
| Last half of 1932 | Feb. 9, 1933, p. 75 |
| First half of 1931 | Aug. 6, 1931, p. 67 |
| Last half of 1931 | Feb. 11, 1932, p. 98 |
| First half of 1930 | Aug. 21, 1930, p. 101 |
| Last half of 1930 | Feb. 12, 1931, p. 130 |
| First half of 1929 | Aug. 1, 1929, p. 154 |
| Last half of 1929 | Jan. 9, 1930, p. 90 |
| First half of 1928 | July 5, 1928, p. 84 |
| Last half of 1928 | Jan. 10, 1929, p. 82 |
| First half of 1927 | July 21, 1927, p. 105 |
| Last half of 1927 | Jan. 19, 1928, p. 72 |
| Last half of 1926 | Jan. 20, 1927, p. 108 |

This list covers the last 10 years' published indexes of The Oil and Gas Journal and we trust will serve your purpose.

## PURCHASED ELECTRIC POWER . . .

. . . never lets you down—not even during a blizzard. The temperature may be zero or lower, but *Electric Power* is right there to serve you the instant you push the switch.

There are many more advantages, too. For example, installation, maintenance and operating costs are lower; equipment is easier and costs less to move from one location to another; and has greater salvage value. Only the exact amount of power required is used and only that quantity is paid for—no loss power, no waste.

Your nearest Electric Power Company will gladly show you how Purchased Electric Power can increase your profits. Ask them for facts concerning your power problems—today!

PROFIT BY USING Purchased ELECTRIC POWER

**PETROLEUM ELECTRIC POWER CLUB**

# QUESTIONS ON TECHNOLOGY

*By Charles K. Francis, Ph. D., Technical Editor*

## Steam Emulsion Test for Inspection of Compounded Cylinder Oils

**Please furnish what information you can on the testing of steam cylinder oils. We have several compounded steam cylinder oils of varying costs and are at a loss in choosing.—E. F. G.**

The tests mentioned in your letter are obsolete, being replaced by the standard methods which have been adopted by the American Society for Testing Materials. The Steam Emulsion Test is suitable for the inspection of oils required to resist emulsification. The test consists in subjecting the oil sample to agitation by direct contact with steam under specified conditions. The time in seconds for the separation of a definite quantity of oil is recorded as the Steam Emulsion Number. When the required volume has not separated in 20 minutes, the oil is said to have an S. E. Number of 1,200 plus.

Details of the test are found in the A.S.T.M. Standards on Petroleum Products.

## Output of Refineries and Cost of Operating Cracking Still

**As a layman I find it rather difficult to obtain a simplified statement of the average output of the modern cracking refining unit. What I would like to know is what would be the percentages of each product of a refinery producing 55 per cent gasoline? My information is: Gasoline of 60-62 gravity, 55 per cent; kerosene, 42-44 gravity, 12.5 per cent; furnace oil, 38-42 gravity, 4 per cent; No. 4 fuel oil, 18 per cent. The refinery cost is 30 to 35 cents a barrel. Is this reasonably accurate for a type operation?—F. B. E.**

The yields from a petroleum refinery are governed by the quality of the charging stock and the type of operation. Formerly there were several kinds of refineries, among which was the topping plant, or simple distillation, in which petroleum was separated into several fractions by the application of heat and condensing the vapors found at the several temperatures. There are relatively few refineries of this kind now in operation. The modern method is to always include cracking and frequently a lubricating plant. Just what the yield of products would be from the "average" topping plant is very difficult to estimate.

The U. S. Bureau of Mines publishes a report showing the charge to stills and the production of the refineries. The October, 1937, report contained this information covering 30 days' operation. Input (barrels) crude oil 105,023,000; rerun 2,390,000; natural gasoline 4,377,000. Output—gasoline 51,191,000; kerosene 5,731,000; gas oil and distillates 13,585,000; residuals 28,199,000; lubricants 3,215,000; road oil 507,000; gas 5,250,000; miscellaneous 228,000; wax 44,240,000 pounds; coke 127,000,000 tons; asphalt 406,900,000 tons.

The total yield of gasoline, from all sources, was 44.6 per cent of the barrel of oil refined.

The American Petroleum Institute shows, in Facts and Figures, Fifth Edition 1937, these yields:

PRODUCTS IN 1936 FROM CRUDE OIL
(Averages for the United States)

| Product— | Per cent |
|---|---|
| Gasoline and naphtha | 44.1 |
| Kerosene | 5.3 |
| Gas oil and fuel oil | 38.6 |
| Lubricating oil | 2.9 |

**The yields from a cracking unit mentioned in your question may be obtained from a good grade of charging stock. The processing costs will depend on the stock and especially the volume handled. The table** following shows costs for two cracking units, one handling 2,000 bbls. and the other 750 bbls. a day.

| | (a) | (b) |
|---|---|---|
| Labor | $0 0230 | $0 0400 |
| Fuel* | 0 0130 | 0 0160 |
| Water | 0 0145 | 0 0145 |
| Steam | 0 0058 | 0 0058 |
| Electricity—lighting and controls | 0 0013 | 0 0013 |
| Air | 0 0013 | 0 0013 |
| Cleanouts—two per month | 0 0072 | 0 0133 |
| Maintenance | 0 0200 | 0 0200 |
| Treating† | 0 0330 | 0 0330 |
| Amortization | 0 0675 | 0 0926 |
| Taxes and insurance | 0 0101 | 0 0139 |
| Royalty | 0 1000 | 0 1000 |
| Total/bbl. virgin stock | 0 2967 | 0 3517 |

*Two per cent liquid fuel required to bring unit on stream. Sufficient gas produced to supply fuel when unit is on stream.

†Sweetening, dyeing and inhibiting (6 per cent per barrel gasoline).

(a) Processing 2,000 bbls. per day of 26-gravity Mid-Continent topped crude, producing 55 per cent, 400° E.P. gasoline and 38 per cent cracked fuel oil.

(b) Same as (a) except lower capacity unit.

## Composition of Fire Clay

**What is the chemical composition of the clay used for making fire brick, such as used for building furnaces, etc.—G. S. E.**

Fire clays vary somewhat in composition; they are not composed of a chemically pure compound. However, the essential substance is an aluminum silicate of the composition—$Al_2O_3$ $2SiO_2$ $2H_2O$. This is alumina 39.45 per cent, silica 46.64 per cent and water 13.91 per cent.

The clay deposit used by a manufacturer of high-grade brick has this composition:

| | Per cent |
|---|---|
| Silica | 53.12 |
| Alumina | 43.30 |
| Ferric oxide | 2.48 |
| Lime | 0.64 |
| Magnesia | 0.46 |
| Alkalies | 0.15 |

There may be numerous impurities in a fire clay; among these the alkalies must be closely controlled and kept at a minimum.

## Electrochemical Treated Oil

**Could you inform us concerning the properties and use of a special oil known as Elektrion oil?—E. O. S.**

Elektrion oil is a viscous oil which has been concentrated and treated by electrical glow discharges. The approximate specifications are: Color, N.P.A.—2 to 3; gravity, A.P.I.—21.5; pourpoint—below 30° F.; viscosity at 210° F., Saybolt Universal, seconds—1,000; flash—440° F.; acid number—1; saponification number—20; Conradson carbon—0.4 per cent.

It is claimed that this oil acts to increase viscosity and to improve viscosity index when added to a lubricating oil. The quantities suggested range from 5 to 15 per cent of the blend. An addition of 10 per cent Elektrion oil has about the same thickening effect as about 30 per cent Bright Stock of 150 seconds S.U. at 210° F.

Reference: De Cavel and Roegiers, Treatment of Oils by Electrical Glow Discharges, Chimie Industrielle, 10th International Meeting, 1930.


## CHEMICALS FOR THE PETROLEUM INDUSTRY

**Sodium Hypochlorite**

Use—Mild Treating, disinfectant, water treating.

Form—Solution with objectionable, sweetish odor, unstable.

Formula—$NaOCl + H_2O$.

LIMITATIONS

Usual solution is 14 per cent, but may be obtained in various concentrations to suit purchaser.

Note—The compound is unstable in air, so is stored in the water solution form.


## International Testing Methods

**Is there an international society which has charge of methods used for inspection of petroleum products? Any information on this matter will be appreciated.—L. W. C.**

The International Federation of the National Standardizing Associations, London, has been active for some years endeavoring to arrange methods of test for petroleum products which would have world-wide adoption. At the World Petroleum Congress in Paris, last June, each test was assigned to a secretariat as indicated in the table.

| Test— | Secretariat |
|---|---|
| Density and specific gravity | Holland |
| Distillation | Great Britain |
| Vapor pressure | United States |
| Gum alteration-oxidation | France |
| Stability of gasoline fuels | France |
| Stability of cracked gasoline | France |
| Sulfur | Italy |
| Calorific value | Italy |
| Ash | Italy |
| Corrosion | France |
| Viscosity | France |
| Action of cold | Belgium |
| Acidity | Austria |
| Saponification | Austria |
| Knock rating | United States |
| Flashpoint | Sweden |
| Colorimetry | United States |
| Illuminating power | Great Britain |
| Carbon residue | Sweden |
| Hard asphalt and impurities | Austria |
| Water content | Great Britain |
| Drop point | Germany |
| Fusion and solidification point of paraffin wax | Holland |
| Sampling | Belgium |

It is expected that the reports covering each test will be made in March, 1938.

The representative for the United States is the American Standards Association, New York, and for France the Association Francaise de Normatisation, Paris.

## Aircraft Engine Fuel Grade 100

**Could you kindly supply us with the specifications covering 100 octane aviation gasoline?—D. S. T.**

The U. S. Army makes use of specifications for Aircraft Engine Fuel, Grade 100, in which the antiknock value is a minimum of C. P. isooctane (2, 2, 4-trimethyl pentane). The additional details are summarized here.

| | |
|---|---|
| Tetraethyl lead per gal. ml. max. | 3 |
| Color Saybolt, max. | 21 |
| Corrosion | nil |
| Gum, accelerated, mgm. max. | 10 |
| Sulfur, per cent, max. | 0.10 |
| Distillation: | |
| Evaporated min. per cent °F. | |
| 10 | 167 |
| 50 | 212 |
| 90 | 275 |
| Sum of 10 and 50 min. | 307 |
| Residue max. per cent | 2 |
| Vapor pressure at 100° F. lbs. max. | 7 |
| Freezing point (solid) max. °F. | −76 |
| Water tolerance ± ml. | 2 |

This fuel is intended for use in hot-running and high-compression or supercharged engines. It shall consist essentially of hydrocarbon compounds, with the addition of tetraethyl lead permitted. The odor shall not be objectionable. No substance of known dangerous toxicity shall be present.

Reference: U. S. Army Specification No. 2-92, Material Division, Air Corps, Wright Field, Dayton, Ohio.

# FIELD OPERATIONS

## Summarizing the Week's Developments

Continental Oil Co. was still coring in the deepest hole in the world in Kern County, California. It had reached 12,792 feet when the latest report was in, but there was no limit set to its depth by the company. A new pool appears in sight east of the Ten Section field in Kern County, the discovery well having made 243 bbls. of oil and some gas on preliminary test. Deep zone discoveries in the Dominguez field are expected to result in at least 50 wells being deepened.

**TEX-LA-ARK**

Results were slim in the East Texas border, North Louisiana and Arkansas area. The Buckner pool in Columbia County, Arkansas, will soon be given some indication of its breadth as one test nears completion. Wells in the Texas side of the Rodessa field have been given a 100-bbl. per day allowable, a 35-bbl. increase.

**TEXAS-SOUTH LOUISIANA**

Extensions to the Benavides and Ezzell pools in Duval and McMullen counties, respectively, were Southwest Texas features. In the Gulf Coast division two pools were added by wildcats in Lafourche Parish, in South Louisiana. A test in Dickinson County, Texas Coast, is attracting much attention as it nears completion. The Friendswood field in Harris County was extended about 6,000 feet eastward, while about the same distance north a big gas well is in the course of completion. In West Texas the Bennett pool in Yoakum County was extended by an 826-bbl. well and the most northerly field in the Permian Basin, the Duggan pool in Cochran County, was given its largest producer and an extension northerly. The well made 611 bbls. a day through 1-inch tubing choke. The Waddell and Jordan pools in Crane County, may have been linked by a midway test which started at 40 bbls. an hour. The K.M.A. field in Wichita County, North Texas, was cut off on the west by a dry hole 3½ miles from the nearest production. That the Avoca and Ivy pools in Jones County will not be one field was proven when a test drilled between the two pools reached 3,450 feet with no showing of any kind.

**KANSAS**

New producing areas were opened in section 21-17-13w, Barton County, Kansas, and section 5-11-18w, Ellis County. The Stumps pool, Ellsworth County, was extended northwestward by a 4,309-bbl. producer. A well extending the Zenith pool, Stafford County, one-half mile southward was completed in section 26-24-11w. A 1,394-bbl. well in section 17-25-1e, extended the Goodrich pool, Sedgwick County, northwestward.

**OKLAHOMA**

A 3,505-bbl. well was completed on the far west side of the Cement field, Caddo County, Oklahoma, and several new operations were started to make this one of the busiest sectors in Oklahoma. Four new deep tests were started in the Fox field, Carter County, and work was begun at an outpost in section 35-6s-2w, Love County.

**NEW MEXICO**

Partial closing of the 2-mile gap between the north and south producing sectors of the Vacuum area, Lea County, New Mexico, was imminent as operators prepared for a production test at a well in section 23-17-34, which made a 30-minute head before being shut in. It is about midway between the two areas.

## Completions in All Fields

(Week Ending January 29, 1938)

| | Oil | Gas | Dry | Total | 1938 total comp. to date | 1937 total comp. to date |
|---|---|---|---|---|---|---|
| N. Y., Pa. and W. Va. | 77 | 27 | 7 | 111 | 495 | 395 |
| Ohio | 6 | 6 | 4 | 16 | 98 | 88 |
| Indiana | 0 | 0 | 0 | 0 | 6 | 20 |
| Kentucky | 9 | 3 | 5 | 17 | 60 | 17 |
| Illinois | 5 | 0 | 0 | 5 | 48 | 0 |
| Michigan | 8 | 0 | 4 | 12 | 59 | 70 |
| Kansas | 21 | 1 | 8 | 30 | 188 | 163 |
| Oklahoma | 21 | 4 | 12 | 37 | 162 | 207 |
| Texas: | | | | | | |
| North Central Texas | 33 | 1 | 14 | 48 | 208 | 215 |
| West Texas | 42 | 0 | 1 | 43 | 227 | 189 |
| Texas Panhandle | 9 | 3 | 1 | 13 | 79 | 56 |
| East Texas | 36 | 0 | 3 | 39 | 227 | 197 |
| East Central Texas | 6 | 1 | 3 | 10 | 47 | 53 |
| East Texas Border | 0 | 0 | 2 | 2 | 14 | 48 |
| Gulf Coast | 16 | 0 | 10 | 26 | 117 | 106 |
| Southwest Texas | 23 | 0 | 9 | 32 | 167 | 288 |
| Total Texas | 165 | 5 | 43 | 213 | 1,086 | 1,152 |
| North Louisiana | 8 | 0 | 2 | 10 | 59 | 37 |
| Gulf Coast Louisiana | 14 | 0 | 8 | 22 | 59 | 39 |
| Total Louisiana | 22 | 0 | 10 | 32 | 118 | 76 |
| Arkansas | 1 | 0 | 1 | 2 | 22 | 3 |
| Montana | 1 | 0 | 0 | 1 | 5 | 10 |
| Wyoming | 2 | 1 | 0 | 3 | 18 | 10 |
| Colorado | 0 | 0 | 0 | 0 | 0 | 2 |
| New Mexico | 4 | 1 | 1 | 6 | 54 | 68 |
| Utah | 0 | 0 | 0 | 0 | 0 | 0 |
| California | 24 | 0 | 11 | 35 | 129 | 117 |
| Total United States | 366 | 48 | 106 | 520 | 2,548 | 2,398 |
| Total previous week | 400 | 53 | 111 | 564 | | |
| Difference | 34 | 5 | 5 | 44 | | |

## Outstanding Fields—Highlights

(Week Ending January 29, 1938)

| FIELD— | Rigs up | Wells drlg. | Weekly oil completions | Initial prod. | Total No. oil wells | Daily av. prod. |
|---|---|---|---|---|---|---|
| **TEXAS** | | | | | | |
| Hastings | 6 | 7 | 4 | 1,883 | 464 | 20,428 |
| McCampbell | 2 | 6 | 1 | 165 | 102 | 4,938 |
| Saxet | 4 | 7 | 0 | 0 | 599 | 41,212 |
| Benavides | 5 | 5 | 3 | 370 | 132 | 6,680 |
| East Texas | 47 | 105 | 36 | 1,866 | 24,450 | 423,250 |
| Talco | 1 | 7 | 3 | 509 | 610 | 24,000 |
| K.M.A. | 72 | 78 | 5 | 4,859 | 116 | 6,724 |
| Ector County | 10 | 74 | 15 | 10,558 | 852 | 25,798 |
| Winkler County | 9 | 17 | 4 | 1,629 | 1,565 | 37,649 |
| **OKLAHOMA** | | | | | | |
| Fitts-Jesse | 6 | 17 | 2 | 1,262 | 956 | 73,875 |
| Billings deep sand | 1 | 3 | 0 | 0 | 61 | 7,975 |
| **KANSAS** | | | | | | |
| Barton County | 6 | 37 | 4 | 1,012 | 286 | 12,500 |
| Ellis County | 5 | 23 | 2 | 2,824 | 274 | 9,705 |
| Rice County | 5 | 24 | 0 | 0 | 1,097 | 38,990 |
| Russell County | 9 | 44 | 5 | 3,005 | 994 | 32,255 |
| **NEW MEXICO** | | | | | | |
| Lea County | 16 | 110 | 4 | 430 | 1,606 | 98,680 |
| **LA-ARK-TEX** | | | | | | |
| Rodessa, Ark. | 4 | 6 | 0 | 0 | 61 | 8,150 |
| Rodessa, La. | 1 | 7 | 1 | 790 | 441 | 43,445 |
| Rodessa, Tex. | 1 | 12 | 0 | 0 | 388 | 17,565 |
| Lisbon, La. | 2 | 12 | 1 | 960 | 167 | 9,000 |
| Shuler, Ark. | 2 | 17 | 0 | 0 | 28 | 8,410 |
| **MICHIGAN** | | | | | | |
| Buckeye | 4 | 39 | 4 | 416 | 346 | 23,852 |
| **ILLINOIS** | | | | | | |
| Central Illinois | 31 | 99 | 5 | 1,163 | 263 | 24,892 |
| **CALIFORNIA** | | | | | | |
| Wilmington | 20 | 35 | 9 | 10,928 | 361 | 70,500 |

# Eastern Field Report

By STAFF CORRESPONDENT

# 24,000,000-Foot Gasser in Oriskany Sand in Kanawha

PITTSBURGH, Pa., Jan. 31.—Probably the largest well in the Oriskany pool in West Virginia was completed in the past week by Godfrey L. Cabot, Inc., on the Myrna and Homer Jarrett farm in Poca district, Kanawha County, 1½ miles northeast of Sissonville. The well gauges 24,000,000 feet a day. The top of the Oriskany sand was at 4,874 feet; first gas at 4,876 feet and was bottomed at 4,880 feet. It is down structure from Sissonville as No. 4 T. H. Newhouse, also completed last week, is 79 feet higher, subsea.

Succeeding completions on the northwest nose of this structure continue to build up a gas reserve which is unsurpassed by any county in the lower Eastern fields. The initial gas potential of six wells completed during the week totals 76,860,000 feet a day. An important test which has reached the top of the sand is that of Linden Drilling Co. on the John B. Kidd heirs, 2 miles northeast of the test on the Jarrett farm, and about on the Kanawha-Jackson County line. If a producer, it opens up a wide extension to the north.

## SOUTHEAST OHIO

In Muskingum County, Ohio, in section 5, Blue Rock Township, Preston Oil Co. completed a test on the George Lilianthal farm in the Clinton sand at 4,250 feet. It produced 10 bbls. the first day, but will be shot.

In Medina County, E. R. Edson & Son Co. drilled a deep test on the A. Kreamer farm, Tract 2, Lot 5, Homerville Township, through the Clinton sand to 2,973 feet and it was dry. In Chatham Township, section 13, same operators' No. 40 Ripley was drilled through the Berea grit to 432 feet and it was dry.

In Morgan County, the North Oil Co. completed a second test on the Effie North farm, Fraction 31, Marion Township, in the First Cow Run sand at 474 feet. It produced 3 bbls. the first day after shot. In section 2, Homer Township, near Joy, Orton C. Dunn, attorney, drilled two wells on the A. A. Boileau farm through the First Cow Run sand to 78 and 80 feet, respectively, and they were both dry.

In Washington County, Lester Swingle and others drilled No. 7 J. D. Murdock, 1 mile south of Wolf Creek, Lot 1077, Palmer Township, through the First Cow Run sand to 593 feet and it was a dry hole.

## SOUTHWEST PENNSYLVANIA

The deep test of Potter Development Co., William E. Snee and others on the Summit Hotel property on Chestnut Ridge in South Union Township, Fayette County, is drilling at 6,200 feet. The Tully lime was topped at 6,085 feet which places it considerably higher on structure than No. 1 close to the road on this farm. No. 1 is subsea minus 3,701 feet, and No. 2 minus 3,637 feet. Less than 600 feet should remain to reach the Onondaga which is the pas-producing horizon in No. 1, and it will be cased at that point. As it now stands, the hole is uncased below the first water.

North of this lease and about 900 feet north of the intersection of the Jumonville Road and the National Highway, Wasson & Co. have spudded in on the J. H. Sorg farm in North Union Township. The Greensboro Gas Co. is building rig on the J. R. Thompson farm, north and east of this Sorg farm test.

### Completions

In Springhill Township, Greene County, Pennsylvania, Union Gasoline & Oil Corp. deepened No. 1 T. M. Galentine to 3,595 feet. The Fifth sand was topped at 3,567-3,580 feet with about 1 bbl. of oil a day at 3,577 feet. In this township, the South West Pennsylvania Gas Corp. completed No. 3 Thomas Smith in the Big Injun sand at 2,569 feet. It is a gas well gauging 225,000 feet a day.

In Wayne Township, Greene County, Eddy and Johnson completed No. 2 E. W. Maple at 2,064 feet. Big Injun sand was topped at 1,925 feet with 800,000 feet of gas at 2,056-64 feet. In this township, Manufacturers Light & Heat Co. drilled No. 3557 Haddie Johnson Ross down to 3,270 feet and it was dry below the Big Injun which had initially a gauge of 475,000 feet a day. It will be plugged back to that formation.

In Washington County, R. M. Duddin completed a small gas well, No. 2 J. E. Johnston, in Peters Township, in the Fifth sand at 2,593 feet. In Mount Pleasant Township, McGuigan Oil & Gas Co. completed a 20,000-foot gas well in the Fifth sand, topped at 2,426 feet, total depth 2,448 feet. In East Finley Township, Parkinson, Plants and others test on the L. A. Phillips farm was dry in the Gordon sand, total depth 2,882 feet.

### Operations

In South Franklin Township, Washington County, the South Penn Oil Co. has reached 2,855 feet in the No. 3 Piedmont Coal Co. with the Fourth sand topped at 2,850 feet and 250,000 feet of gas at 2,851 feet. The Dunn Mar Oil & Gas Co. is building a rig on the Baldwin-Gunn farm.

In Amwell Township, Carnegie Natural Gas Co. is rebuilding rig over No. 4 N. B. Redd. In Peters Township, this company is drilling at 390 feet on the H. H. Schussler farm. In Somerset Township, Victor D. Behm and others had reached 1,375 feet on the J. D. Amos test with the gas sand at 1,206-46 feet; Salt sand 1,292 feet and 200,000 feet of gas, which blew down.

### Greene County

In Whitely Township, Greene County, Equitable Gas Co. is deepening No. 1 Smith Fuller from 2,010 feet and had reached 2,100 feet. In Jackson Township, this company is down 3,230 feet, deepening No. 1 Thorp.

In Center Township, South Penn Oil Co. is drilling at 510 feet in No. 12 Samuel Harvey. Carnegie Natural Gas Co. spudded in and reached 400 feet in No. 3 J. H. Orndoff. J. B. Orndoff is building rig for No. 2 G. M. Scott.

In Dunkard Township, Convex Glass Co. was deepening No. 2 VanVoorhis from 2,618 feet. In Greene Township, Anna L. Garard is drilling No. 1 M. Minor at 2,937 feet. The Elizabeth sand was at 2,926 feet, with 400,000 feet of gas at 2,930 feet. In Richhill Township, the Natural Gas Co. of West Virginia is down 2,450 feet in No. 2 D. G. Rush.

### Deep Tests

The test of Norwood P. Johnston and others on the James McBurney farm in Mount Pleasant Township, Washington County, is drilling at 6,907 feet in the Helderburg lime which was topped at 6,789 feet. Drilling will be continued through this formation and then probably the test will be abandoned.

## WEST VIRGINIA

In Calhoun County, West Virginia, Witago Oil Co. completed a well on the Gertrude Mollohan farm in Lee district at 1,522 feet. Salt sand was at 1,512 feet with oil and gas at 1,512-22 feet. The oil is estimated at 5 bbls. a day and the gas volume gauged at 125,000 feet a day.

In Wood County, Wamsley Oil Co. test on the S. W. Stagg farm was completed at 1,780 feet. The Cow Run sand is producing about 1 bbl. a day and there is a gas volume of 53,000 feet a day. The test is in Union district.

The best gas well for the week in lower West Virginia was the test of George Hale and others on the George Akers farm in Warfield district, Mingo County. It gauged 13,330,000 feet a day from the Brown shale at a total depth of 2,950 feet. This is exceptionally high for Brown shale production.

In Braxton County, Pittsburgh & West Virginia Gas Co. completed No. 7640 on the E. F. Martin farm in Otter district at 2,689 feet. It showed 37,300 feet of gas at 2,465-72 feet. In Birch district this company completed No. 7630 Parkersburg Mill at 2,035 feet with 93,000 feet of gas at 1,940-43 feet. In Otter district, the test of the McCall Drilling Co. on the H. G. Clouser farm was drilled to 2,850 feet and bottomed in slate, and it was dry.

In Cabell County, E. L. Lusher completed a test on the Joseph Adkins farm in McComas district at 3,425 feet; Brown shale 2,690-3,425 feet and the Corniferous lime was topped at 3,425 feet. It gauges 106,000 feet of gas a day from the Brown shale. In Guyandotte district, C. J. Teubert completed a test on his fee farm at 3,017 feet. The Big Lime gas at 1,091-1,220 feet; Big Injun 1,250-1,360 feet; Berea 1,895-1,920 feet; Brown shale 2,460-3,017 feet, and 20,560 feet of gas in 72 hours after a shot in the shale.

In Gilmer County, Goen W. Roberts' well on the Gilbert Rhodes farm in DeKalb district, was drilled to 2,818 feet and plugged back to the Maxton sand at 1,381-1,443 feet and shot with 60 quarts. After 48 hours, the gauge was 33,600 feet a day.

In Lincoln County, the Blue Ridge Gas Co. completed No. 2 Elijah L. Adkins at 3,358 feet, deepened from 2,044 feet. It gauges 183,000 feet of gas a day in the Brown shale.

In Pleasants County, the Borland Springs Oil Co. drilled a test on the Warren Roberts farm in Jefferson district through the Cow Run sand to 840 feet and it was dry and abandoned.

In Ritchie County, W. R. Hays completed a second test on the I. R. Wilson farm in Murphy district in the Injun sand at 2,000 feet and it gauges 180,000 feet a day. In this district, Clem S. Morris completed a second test on the Worth E. Cox farm in the Salt sand at 1,610 feet and it gauges 300,000 feet a day.

In Wayne County, the Mountaineer Gas Co. completed a second test on the Lee Adkins farm in Union district at 3,344 feet. The Big Lime was at 1,460-1,635 feet; Big Injun 1,653-1,702 feet; Berea 2,273-2,365 feet; Brown shale 2,670-3,322 feet with 220,000 feet of gas at 2,700 feet and 3,167 feet. In this district, the Bazil Burgess Gas Co. completed a test on the L. and M. Lester farm at 1,450 feet. The Salt sand was at 900-1,232 feet; Big Lime 1,320-1,450 feet with 918,000 feet of gas at 1,440 feet.

### Oriskany Gas Field

Several large wells were completed in the Elk-Poca pool in Kanawha County during the week. In Poca district, the West Virginia Gas Corp. completed a test on the O. A. Vandine and others lease at 4,903 feet with the Oriskany sand topped at 4,884 feet and a final gauge of 16,158,000 feet a day.

The South Penn Oil Co. completed another fair well in the No. 4 T. H. Newhouse, across the river from Sissonville at a depth of 4,804 feet. The sand was topped at 4,794 feet with gas at 4,798 feet and 10 feet in the gauge was 14,000,000 feet a day. It may be deepened 5 feet.

In Poca district, the Lima Gas Co. completed a test on the Emmett Thaxton farm at 5,038 feet with the Oriskany at 5,019 feet and a gauge of 12,720,000 feet a day. This part of Poca district is the southern overhang close to Elk district.

The United Fuel Gas Co. completed No. 4763 on the C. L. Whittington farm in Poca district at 5,100 feet with the Oriskany sand topped at 5,062 feet and

*(Continued on Page 66)*

# North Louisiana, Arkansas

By GEORGE WEBER

# Rodessa, Texas, Allowable Is Increased; Few Completions

SHREVEPORT, La., Jan. 31.—A few wildcat and outpost field tests drew attention of operators in the district in an otherwise uneventful week of field development. Rodessa production was equalized somewhat by a new ruling of the Texas Railroad Commission, which classed the Jefferson-Lodi area with Cass County. A deep Permian test in Claiborne Parish is drilling below 9,000 feet, and two important outpost tests are beginning for the Buckner field of South Arkansas.

## Rodessa

The Rodessa field gained more equitable production proration when the Texas Railroad Commission placed the allowable of wells in Cass and Marion counties at a daily average of 100 bbls. The former average production allowable was 65 bbls. per day. As before, the allowable will be based 50 per cent on acreage and 50 per cent on bottom-hole pressure, with a gas-oil ratio limit of 2,000 feet per barrel for full allowable production.

The Jefferson and Lodi sections of Rodessa were included in the order, continuing, for the time being, at least the classification of the new production area with Rodessa proper in Cass County. Operators of the Jefferson-Lodi area met two weeks ago at a hearing presided over by Texas Railroad Commissioners, and asked that the area be given individual classification, due to its apparent status as a separate field. No direct ruling has been made as a result of the hearing.

The allowable increase for Cass and Marion counties is the daily production rate on a six-day week, with the current Sunday shut-down in effect throughout Texas. This one-seventh cut makes Texas production at Rodessa still the lowest in that tri-state field.

The Miller County sector of Rodessa will increase production somewhat during the coming week as the new 15,000-bbl. basic allowable set by the Arkansas State Board of Conservation goes into effect. The total of 15,000 bbls., however is the basic allowable, without deductions to be made for excessive gas-oil ratios. The great number of wells in Miller County which produce with gas-oil ratios in excess of 2,000 feet of gas per barrel of oil will, however, cut the total corrected allowable to about 10,000 bbls., representing an increase in actual production of about 1,500 bbls.

Although drilling activity is relatively active in Rodessa, particularly in the Marion County, Texas, section, only one completion was reported during the week. The Standard Oil Co. of Louisiana No. 2 Terry and others, SE cor. SW SW section 2-23-16, Caddo Parish, made 33 bbls. per hour on a half-inch choke with casing pressure of 650 pounds and tubing pressure of 230 pounds. The gas-oil ratio is 1,085 feet per barrel. Total depth is 5,995 feet.

Twenty-five wells are actively drilling in Rodessa, nearly half of them in the Jefferson-Lodi section of Marion County, where several tests are on the sand and slated for early completions.

## Caddo Field

The Louisiana Oil Production Co. placed three small wells on the pump in the shallow Caddo field of Caddo Parish. The No. 3-C Muslow in section 9-20-15 made 50 bbls. per day at 2,172 feet. No. 3-D Muslow, section 5-20-15, was brought in for 15 bbls. per day at 2,214 feet, and No. 4-D Muslow, in the same section, made 40 bbls. per day at 2,196 feet.

## Estimated Daily Production

Estimated daily gross production of all companies in the week ending January 28, 1938 was as follows:

**NORTH LOUISIANA**

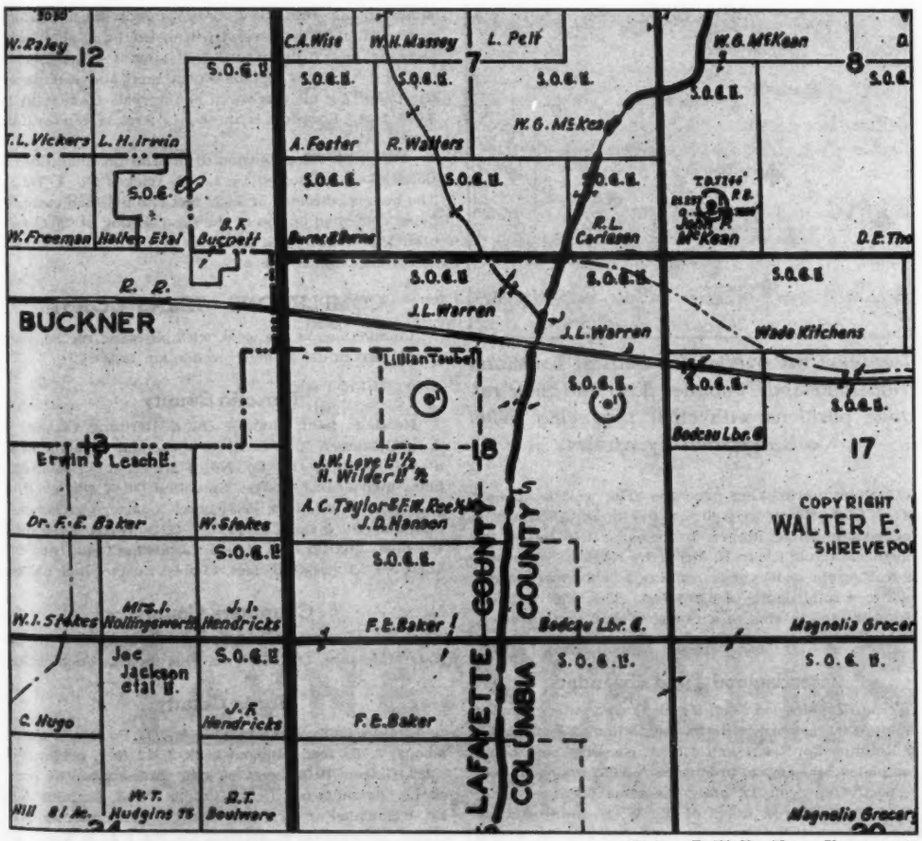
| | |
|---|---|
| Bellevue | 680 |
| Caddo light | 3,860 |
| Caddo heavy | 2,560 |
| Converse | 630 |
| Cotton Valley heavy | 300 |
| Cotton Valley light | *5,830 |
| De Soto and Red River | 1,445 |
| Elm Grove | 355 |
| Haynesville | 3,040 |
| Holly | 95 |
| Homer | 2,520 |
| Lisbon | 9,000 |
| Pleasant Hills | 115 |
| Rodessa | 43,445 |
| Sarepta-Carterville | 320 |
| Sligo | 305 |
| Sugar Creek | 340 |
| Urania | 2,890 |
| Zwolle | 740 |
| Total | 78,470 |

**SOUTH ARKANSAS**

| | |
|---|---|
| Buckner | 480 |
| Champagnolle | 1,225 |
| El Dorado | 1,835 |
| Lisbon | 280 |
| Miller County | 405 |
| Nevada | 680 |
| Rodessa | 8,150 |
| Shuler | 8,410 |
| Smackover light | 1,965 |
| Smackover heavy | 16,000 |
| Stephens | 540 |
| Troy | 1,280 |
| Urbana | 1,205 |
| Total | 42,455 |

Texas side of Rodessa field 17,565 bbls. daily.

*3,310 bbls. is distillate.




Walter E. Wylie, Maps, Shreveport

*The Buckner field of Columbia County, Arkansas, will shortly be given another test on the southwest. Lillian Taubel and others No. 1 Tatum, about three-quarters of a mile southwest of Standard Oil Co. of Louisiana No. 1 McKean, discovery well, is drilling below 3,644 feet. In the same section, about one-half a mile east, Standard has set surface casing on No. 1 Bodcaw-Barbara*

## Lisbon Field

Outposts to the northeast and southwest brought attention to the Lisbon field of Claiborne and Lincoln parishes this week. The Magnolia Petroleum Co. extended production one location on the northeast by completion of the No. 1 Fowler, C W half NW SE section 28-21-4, for an initial production of 40 bbls. per hour on a half-inch choke. Tubing pressure is 250 pounds and casing pressure 80 pounds. Porous lime was cored at 5,192-97 feet and seven-inch casing was set at 5,193 feet. Three thousand gallons of acid were used in treating the well. Total depth is 5,209 feet.

Operations on the southeast outpost test, C. R. Schuster and others No. 1 Sallie Lloyd, are not yet far enough along to determine whether or not it will extend the Lisbon field. The test, in C S half SW SW section 2-20-15, cored 12 feet of porous lime with saturation, and set 5½-inch casing at the total depth, 5,271 feet. Plugs were drilled out and tubing run for a test. The semiwildcat is three-fourths of a mile southwest of nearest production in Lisbon.

Southwest of Lisbon, in the Sugar Creek area, a deep Permian test is attracting attention. The Union Production Co. and Standard Oil Co. of Louisiana No. 2

*(Continued on Page 66)*

# Texas and Louisiana Gulf

By
NEIL WILLIAMS

# South Louisiana Adds Two Pools in Lafourche Parish

HOUSTON, Tex., Jan. 31.—Two oil fields were added to the Louisiana sector of the Gulf Coast district in the past week with the completion of wildcats in Lafourche Parish.

In the Raceland area, north central Lafourche Parish, Amerada Petroleum Corp. and Louisiana Land & Exploration Co. No. 1 South Coast Corp., section 34-15s-19e, was washed in on January 26, and on an 18½-hour gauge, flowed 536 bbls. of fluid, of which 15 per cent was sediment and water, through a quarter-inch choke with tubing pressure 1,500 pounds and casing pressure 1,600 pounds. The gas-oil ratio was 640 to 1. The hole is bottomed in Miocene sand at 10,314 feet, and the well is flowing from perforations at 10,205-08 feet, and at 10,183-10,201 feet.

The structure was found by the use of geophysics, and is located southwest of the Bayou Des Allemands field in St. Charles Parish and northwest of the Valentine field in Lafourche Parish. It is 3 miles east of Raceland near the bank of Bayou Lafourche. No. 1 South Coast Corp. has been looked upon as a possible pool opener for several months after having cored a sand at 7,239-79 feet.

Approximately 50 miles south in section 36-23s-21e, Gulf Oil Corp. No. 3-PP State, Timbalier Bay Prospect, flowed 304 bbls. of fluid per day through a three-sixteenths inch choke with tubing pressure 800 pounds and casing pressure 750 pounds. Production is from the Miocene section through perforated casing at 6,955-59 feet. Salt water intrusion, which has delayed completion for several weeks, may result in the well being recompleted, as the fluid content is reported to contain from 1 to 14 per cent brackish water. This structure was proven a salt dome several weeks ago when the formation was topped at 7,741 feet, and cored to a total depth of 8,728 feet.

In the Villa Platte field, Evangeline Parish, Continental Oil Co. No. 1 Louisiana Central Land & Improvement Co. topped the Cook Mountain formation at 7,997 feet, and is drilling in shale below 8,800 feet. The test is 1½ miles southwest of the discovery well and based on top of the Cook Mountain it is running about 60 feet lower. Location has been made for No. 1 N. H. Hirsch, section 44-3s-2e, and a rig is being moved to the location.

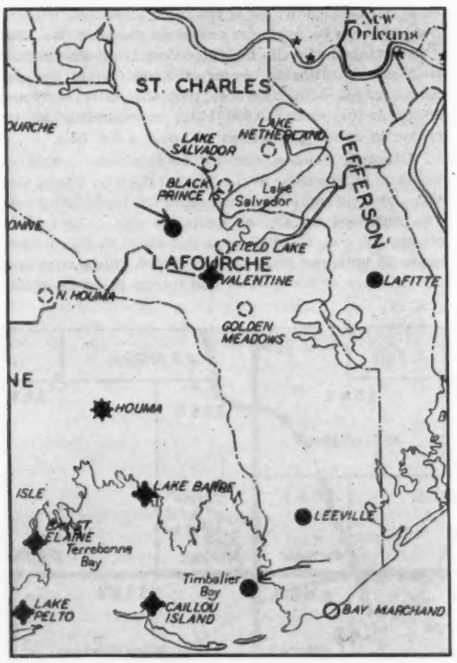
Humble Oil & Refining Co. No. 2 Ohlenforst, North Crowley field, Acadia Parish, logged sand at 8,100-10 feet, and on a 6-minute drill stem test, recovered 70 pounds of working pressure and 570 feet of oil. Casing has been cemented for a production test. One-half mile east of production, No. 1 Daly, section 44, is drilling in shale below the discovery horizon at 8,146 feet. No showings have been reported.

Shell Petroleum Corp. added a deep producer to the Gibson field, Terrebonne Parish, with the completion of No. 4 Pelican, which flowed 604 bbls. per day through a 12/64-inch choke. It is producing from sand cored at 9,490-9,508 feet, total depth. In the same parish and northwest of the discovery well of the Lirette field, Humble Oil & Refining Co. No. 1 Wurzlow is drilling in shale below 10,601 feet.

### Dickinson Test Attracts

Interest along the Texas Coast is centered on the Dickinson area, Galveston County, where Humble Oil & Refining Co. is preparing for a production test at No. 1 Peters, a semiwildcat about 2 miles southeast of production in the J. W. Lyttle Survey. The hole is bottomed at 9,355 feet and casing is being cemented at a plugged-back depth of 8,363 feet. The Marginulina was topped at 7,296 feet and Frio at 7,908 feet. Possible sands were logged at 8,026 and 8,218 feet where the production test is expected to be made. The outcome of this well has attracted wide attention as it may open another producing area similar to the Gillick area which is separated from the field proper by a major fault. Based on geological markers, the well is checking higher than the company's No. 1 Rohman, about 5,000 feet to the northeast which was abandoned at 8,261 feet, due to extremely high gas pressures.

A second oil well on the southwest flank of the Orange field, Orange County, was assured with the showing of Gulf Oil Corp. No. 1 Orange National Bank which is running casing after a 6-minute drill stem test at 5,893-5,922 feet, showed 1,000 feet of pipe line oil and




*Two new discoveries for Coastal Louisiana (Raceland and Timbalier Bay) and their relative positions with other producing fields are indicated by arrows*

50 pounds of working pressure. The well is an east offset to the discovery well, but the top of the sand was logged several feet higher. In the same field, but on the northeast flank, Glenn H. McCarthy No. 2 E. W. Brown is waiting for orders after running a Schlumberger survey to a total depth of 6,313 feet. This well is being watched closely, due to a reported sand section below 6,200 feet that showed gas.

### Friendswood Field Extended

The Friendswood field, Harris County, was extended about 6,000 feet east with the completion of Humble Oil & Refining Co. Nos. 1 and 2 E. A. Kiesling, both being completed for average producers at 6,052 and 6,050 feet respectively. Approximately the same distance north, No. 1 E. H. Pierce, Lot 2 of the W. K. Smith Survey showed for a large gasser at 6,050 feet and the screen and liner is being reset for a second completion attempt. The sand was topped at 5,944 feet. Locations were made by H. C. Cockburn and others for No. 1 fee in the William K. Smith Survey while Humble Oil & Refining Co. has spudded No. 1-B J. L. Jones in the Perry and Austin Survey.

In the northwestern part of the county in the recently opened Fairbank field, E. L. Smith and H. B. Ownby Drilling Co. made location for No. 1 L. M. Meyers, about 3,000 feet east of the discovery well in Lot 8, George Ayers Survey. This acreage was farmed out by the Sun Oil Co. The expiration of numerous leases is expected to create an active drilling program within the next 90 days.

### Failure in Call Field

Another failure for the Call field, Newton County, loomed at Republic Production Co. and Houston Oil Co. No. 3 Peavy-Moore Lumber Co., about 1,350 feet south of the discovery well. On a drill stem test at 7,108-28 feet, 26 thribbles of salt water with no show of oil or gas, was recovered. The hole is bottomed in the Cockfield at 7,366 feet and may be plugged back and a test made at 6,900 feet where a favorable showing was logged. This is the fourth well to be drilled, but only the discovery well is producing.

In the Cheek area, Jefferson County, Glenn H. McCarthy pulled screen and liner in No. 1 Broussard and the perforations at 7,718-27 feet were squeezed off preparatory to reperforating a few feet higher in an attempt to eliminate salt water. Another core test was staked for Humble Oil & Refining Co. No. 1-A C. T. Garth, located in the S. Horton Survey, Jefferson County.

Texas Co. No. 4 Freeport Sulphur Co., Bryan Mound dome, Brazoria County, is shut down awaiting orders after coring several feet of sand and shaly sand showing oil. A 10-minute drill stem test at 3,479-96 feet showed 1,700 feet of oil-cut mud and salt water. Sand showing oil was cored at intervals from 3,481 to 3,548 feet. Location is in the C. Arriola Survey, Abstract 141.

A slight north extension to the Hardin field, Liberty County, was indicated by L. W. Wickes No. 1 Tullos. The hole is bottomed at 7,633 feet and 5½-inch casing is being cemented on top of the sand section at 7,623 feet, after a 15-minute drill stem test at 7,623-28 feet showed 1,500 feet of pipe line oil.

## COMPLETIONS—TEXAS COAST

Completions of the week with pay sand record, total depth, and initial 24-hour production follows.

### Brazoria County

Hastings field: Humble Oil & Refining Co. No. 5 J. E. Alexander, 5,910 feet, 615 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 4 Miller, 6,145 feet, 227 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 14 Shaw, 6,080 feet, 583 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 7 T. C. Edwards, 6,080 feet, 457 bbls., quarter-inch choke. Lockridge field: Gulf Oil Corp. No. 3 Reiss, 6,368 feet, 45 bbls., quarter-inch choke.

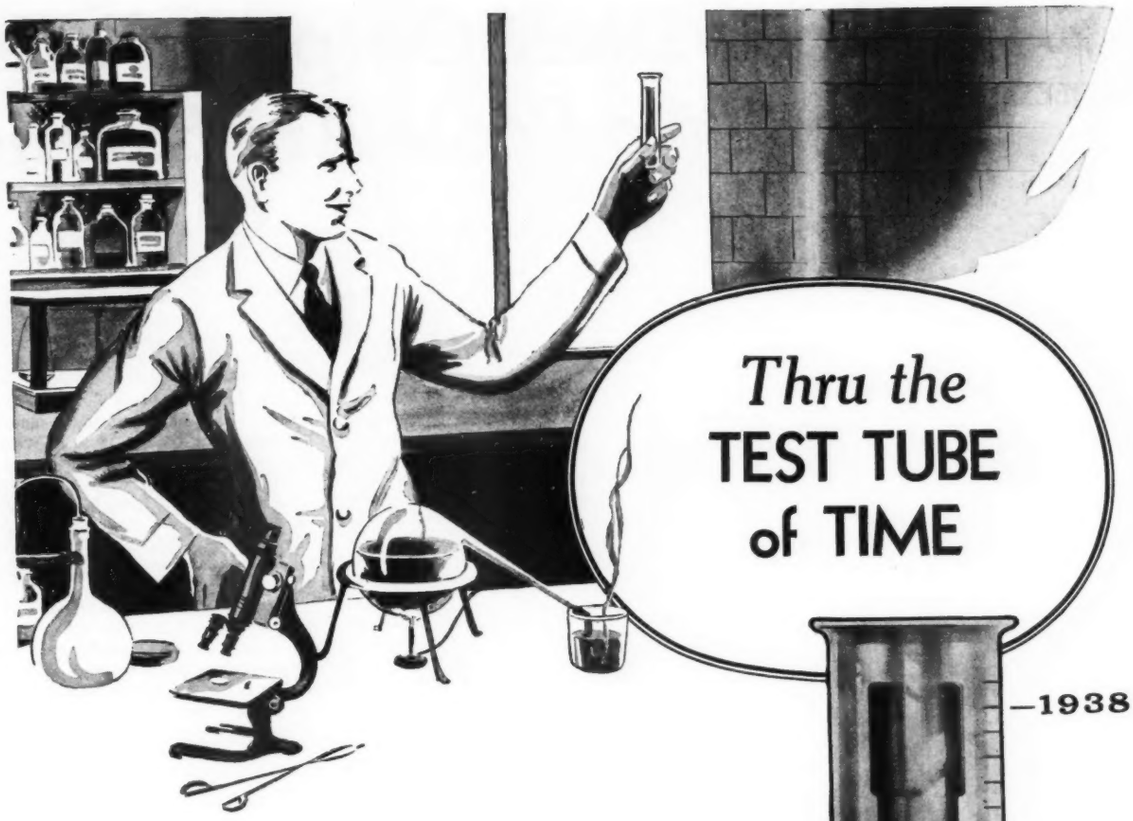
### Chambers County

Anahuac field: Humble Oil & Refining Co. No. 30 A. D. Middleton, 7,085 feet, 452 bbls., quarter-inch choke.

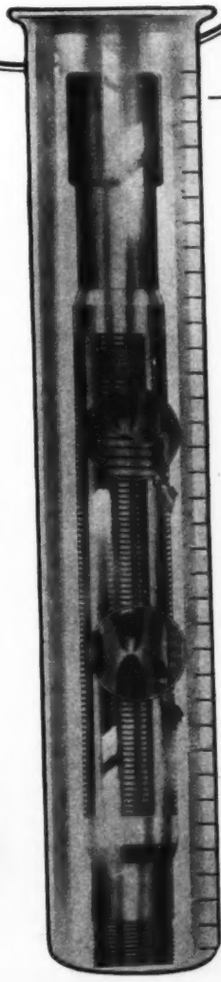
### Harris County

Clinton field: Stanolind Oil & Gas Co. No. 1 A. S. Moody, 3,700 feet, plugged back 3,242 feet, perforated 3,220-25 feet, 10,000 feet of gas, three-sixteenths inch choke. Friendswood field: Humble Oil & Refining Co. No. 1 Hoidale-Forster, 6,050 feet, 624 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 1 A. E. Kiesling, topped sand 5,840 feet, 6,052 feet, 607 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 2 A. E. Keisling and others, topped sand 5,795 feet, 6,050 feet, perforated casing 5,854-70 feet, 744 bbls., quarter-inch choke. Tomball field: Humble Oil & Refining Co. No. 1 Tomball Townsite, 5,592 feet, 312 bbls., quarter-inch

*(Continued on Page 75)*



# *Thru the* TEST TUBE of TIME



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# Southwest Texas District

By
F. L. SINGLETON

# Flour Bluff Outpost Failure, But Two Pools Are Extended

CORPUS CHRISTI, Tex., Jan. 31.—Extensions to the Benavides field in Duval County and Ezzell field in McMullen County were the featured developments of a comparatively quiet week in the Southwest Texas district.

Hiawatha Oil & Gas Co. No. 6 Southland Life Insurance Co., 6,000 feet southeast of production of the Benavides field, Duval County, is flowing an estimated 100 bbls. of oil daily through a 5/32-inch choke, with tubing pressure 1,000 pounds and casing pressure 1,300 pounds. Production is from perforated casing at 5,491-5,501 feet, which opens the second producing zone in the Cockfield formation. All production from the Cockfield heretofore has been from a depth slightly below 5,300 feet. This is the sixth producing zone for the structure which has promise of extending over a wide area.

Five miles southwest of Benevadies, in section 5, of the Santos Flores Grant 25, Circle Oil Co. and others abandoned No. 1 Southland Life Insurance Co. at 5,300 feet. Cockfield sand was topped at 5,048 feet. Another test is scheduled to be drilled in the immediate area, as several slight showings of oil were reported to have been logged in the abandoned test. Along the same trend, and 10 miles south of San Diego, Magnolia Petroleum Co. No. 1-A Lopez is drilling in sandy shale below 6,520 feet.

An increase in drilling operations in the already active Ezzell field, McMullen County, is expected following the completion of two important outpost tests. Edwin M. Jones No. 1-F Ezzell, 4,800 feet southwest of production, cored oil sand at 1,489-1,503 feet, and the well made an initial production of 150 bbls. It is located in the northwest quarter of Survey 29, and is southwest of the same operator's No. 1-E Ezzell, recently completed in oil sand at 1,524-30 feet, after production of 150 bbls. the first 24 hours.

### New Wildcats in Webb

Three wildcat operations were started in Webb County. Gilcrease Oil Co. No. 1 Trofton, M. Lopez Survey, cemented surface casing at 46 feet. In the F. Lopez Survey No. 55, Colton, Leslie & Mitchell No. 1 Lopez is drilling in shale below 1,936 feet, and Smith & Storey No. 1 Haines, Survey No. 234, is drilling in shale at 1,262 feet.

### Starr County

In Starr County, Transwestern Oil Co. and others were preparing for a production test at No. 3 Slick Estate after a 4½-minute drill stem test through perforated casing at 4,193-4,232 feet showed 90 feet of mud, some distillate and 300 pounds of gas pressure. This was a scheduled 8,500-foot test, but at a depth of 6,862 feet mechanical trouble developed. Five and one-half inch casing was cemented at 4,300 feet. Location is in section 527.

Two miles southwest of the Cuevitas field in La Sacatosa Grant, Sun Oil Co. staked location for No. 2-D Guerra. In the town of Rosita, Porcion 72, W. W. Ely No. 1 M. G. Gonzales was abandoned at 3,005 feet after two drill stem tests through perforated casing at 1,013-18 feet and 756-67½ feet showed salt water.

Across the line in Hidalgo County, Atlantic Refining Co. has killed No. 1 American Rio Grande after it failed to increase in production. For the past several days, the well has been flowing approximately 19 bbls. of distillate through a three-eighths inch choke from perforations at 8,998-9,005 feet. Casing has been reperforated at 8,810-20 feet.

Northeast of Mercedes in the San Juan De Carricitos Grant, Willacy County, Magnolia Petroleum Co. No. 1 Armendiaz is coring below 8,200 feet with no shows reported. The contract depth of this well is 9,000 feet.

### Corpus Christi District

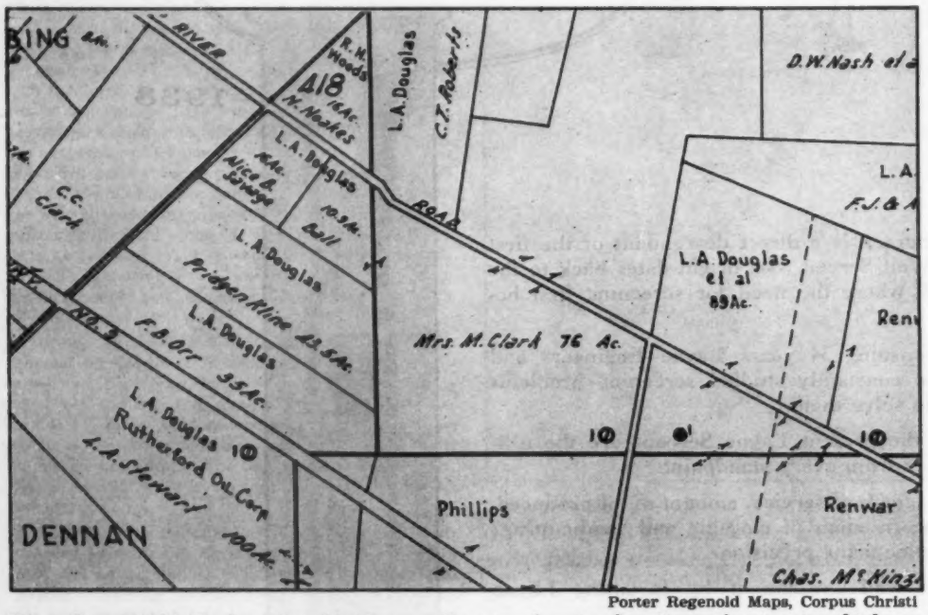
In the Corpus Christi district, operators were watching the progress of three outpost wells in the West Saxet field, Nueces County. East of the discovery well, 1,500 feet, Renwar Oil Corp. No. 1 McKinzie is drilling below 5,394 feet while the same company's No. 1 Rand Morgan, 1 mile to the southwest, is drilling below 4,400 feet, and is reported to be checking normally with the discovery well. Due west, about 3,300 feet, Rutherford Oil Corp. No. 1 L. A. Stewart is drilling below 4,200 feet. The discovery well was completed in sand at 5,810-12 feet and the above wells should core the sand by the middle of the week.

The northeast side of the Flour Bluff field, Nueces County, was defined with the abandonment of Humble Oil & Refining Co. No. 14 L. A. Webb which found a salt water sand at 6,702 feet. The well is located in Lot 7, section 56, and apparently eliminates possibilities of extensive drilling in Laguna Madre. In Lot 15, section 42, same company's No. 4 Chapman flowed 175 bbls. daily through a one-eighth inch choke from oil sand topped at 6,647 feet and bottomed at 6,667 feet, total depth.

In the Richard King field, western Nueces County, Southern Mineral Corp. No. 4 King flowed 81 bbls. per day through a five-sixteenths inch choke with casing pressure 300 pounds and tubing pressure 75 pounds. Production is through perforated casing at 4,023-26½ feet. Location has been made for No. 5 King, 1,800 feet east of No. 3 and 300 feet north of the south line of section 6.

Northwest of Banquete in the Lopez De Juan Survey, Union Producing Co. No. 1 Simmon has plugged back from a total depth of 8,706 feet to 4,810 feet, preparatory to testing an oil and gas zone logged at 4,822-29 feet.

Two wildcats in San Patricio County were being watched. One mile southeast of the San Patricio Townsite, James McGloin Survey, Conroe Drilling Co. No. 1 J. R. Dougherty is drilling in shale below 5,482 feet after an unsuccessful drill stem test at 5,352-5,425 feet. A Schlumberger survey of the section showed sand with no oil showing. One mile west of Taft, section 62, Plymouth Oil Co. No. 1 Brigham, cored sandy shale with show of oil at 4,976-86 feet, and on a drill stem test, 360 feet of mud and 90 feet of salt water was recovered. It is drilling ahead below 5,000 feet.




Porter Regenoid Maps, Corpus Christi

*West Saxet field (Turkey Creek), Nueces County, showing locations of outposts which are nearing the discovery horizon*

### San Antonio District

In the Balcones Fault Line district, R. W. Fair No. 1 San Antonio Subdivision, H. Pickens Survey, in Bexar County, opened a shallow field at 1,150-90 feet when it pumped an estimated 10 to 15 bbls. of oil per day. Gravity of the oil tested 32 degrees. The field is located 4 miles southwest of Macdona.

Midway between the Branyon and Luling fields, Caldwell County, Mac-Wag Tree Oil Co. No. 1 Roberts is bottomed in lime at 2,633 feet, and 5½-inch casing was cemented at 2,517 feet. Some saturation was reported to have been logged at 2,531-69 feet. It is located 2 miles west of Tilman in the W. House Survey.

In Bastrop County, J. W. Bigg No. 1 Lentz, F. Wilkenson Survey, is rigging up to pump. The hole is bottomed in Austin Chalk at 2,514 feet, with 5½-inch casing cemented at 2,443 feet. Southern Cross No. 1 Smith, James B. Bialock Survey, was abandoned at 2,238 feet.

## COMPLETED WELLS

Completed wells in proven Southwest Texas fields, with their total depth, and the initial 24-hour production of the producing wells, were as follows:

### Aransas County

McCampbell field: Buckingham-Tom Graham Oil Co. No. 5 Porterfield, 7,135 feet, plugged back 7,115 feet, 165 bbls., three-sixteenths inch choke.

### Bexar County

Von Ormy field: Putnam Rogers No. 10 Wetz, 650 feet, 3 bbls., pumping.

*(Continued on Page 66)*

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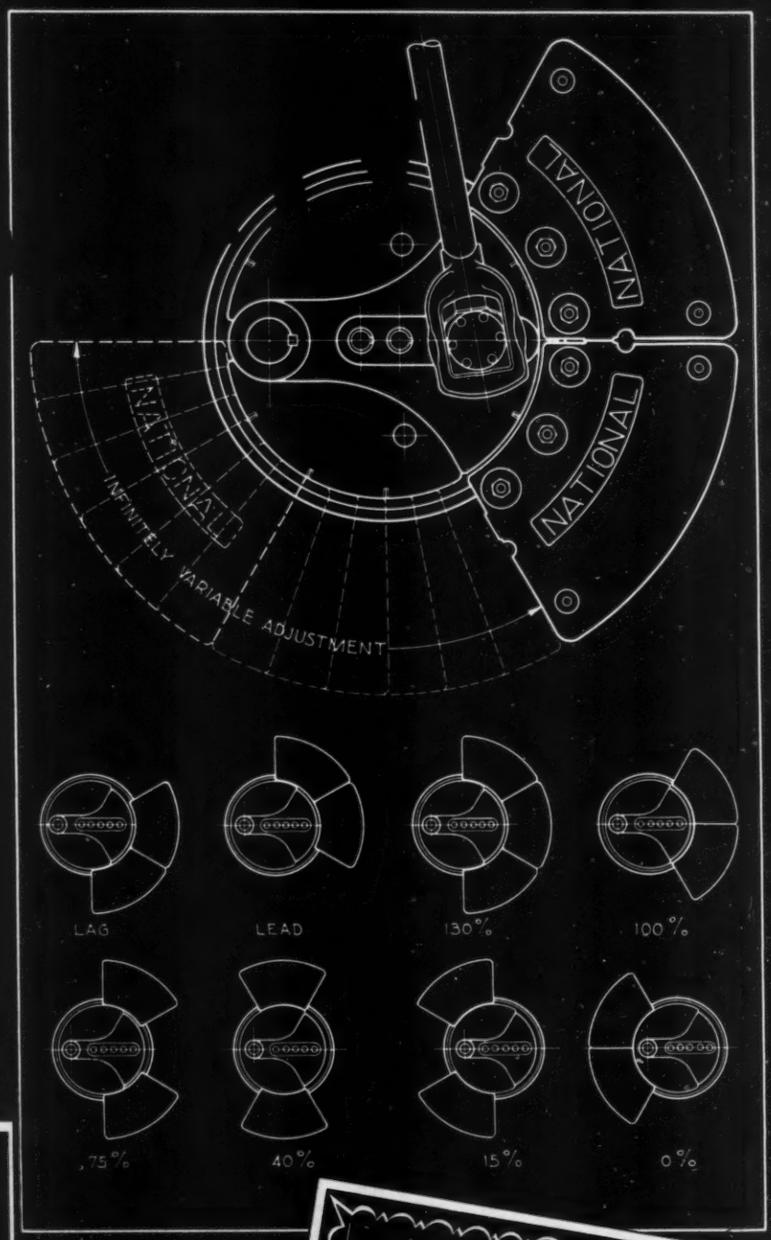


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# North and East Texas

By
MITCHELL TUCKER

# K. M. A. Progress Is Stopped at 3½-Mile Western Outpost

WICHITA FALLS, Tex., Jan. 31.—The K.M.A. pool of southern Wichita and northern Archer counties received its first major set-back in the past week when Geier Brothers & Jackson No. 1 Ancell, 3½-mile western outpost, encountered salt water after drilling plug at 3,990 feet. The Kemp City lime was topped at 3,928 feet, sand at 3,962 feet and casing was set at 3,958 feet before testing. This failure greatly lowered the possibilities of production in three tests started west of it, however, the entire K.M.A. field is featured by a series of local highs and lows so production further to the west is not fully discounted.

Rathke Oil Co. No. 1 Burnett, section 4, H.T.&B. Survey, 3 miles northwest of the Joe A. Worsham's extension in the northern part of the field is bailing preparatory to drilling plug in casing cemented on top of the lime at 3,500 feet. The Kemp City lime was topped favorably here and should this test make a producer it will extend activities into the Electra district.

Pipe line connections have been made for the Joe A. Worsham No. 1 Waggoner, northwestern pool extension well completed last week. The well is now making an estimated 250 bbls. daily but will receive a nitroglycerin shot before being put on official gauge.

Earlier reported as a dry hole, Staley Oil Co. No. 1 J. M. McFall, in the H. Balch Survey, Abstract 12, about 2,000 feet northeast of the new Grace-Woods producer, now gives indications of being a 175- to 200-bbl. well. The test was plugged back from 4,000 feet to 3,905 feet and the saturated section from 3,850 feet to 3,900 feet given a 200-quart shot. Testing continues.

During the past week 36 locations were staked at K.M.A. As the week closed five wells had been completed for an aggregate daily potential of 4,859 bbls., 29 were in the process of completion and 40 wells actively drilling. The number of deep sand oil wells in the pool now totals 116.

Lease trading continued last week in the proven area, but dealing was almost at a standstill on the edges of the pool pending developments at the outpost wells. Chet E. Everttts paid A. N. Mills $6,500 cash and $8,500 payable out of one-quarter of the oil produced for Lot 20, W.V.F.L. Survey, south of the Wichita River in the pool proper. A new entry into the pool was Clark & Cowden Drilling Co. of Dallas, who took a block of 200 acres in the A. Gibson Survey from the Waggoner Estate.

### Archer County

C. E. Schaeffer Oil Co. and Norwood No. 1-A W. P. Ferguson, northwest corner of Block 15, R. McKim Survey, Abstract 182, east offset to the first K.M.A. producer in Archer County in the deep pay, drilled into water at 3,891 feet after finding some saturation, and will be plugged back and completed for a small producer. North offset to the Archer discovery well, Nazro & Gruggs No. 1 Ferguson, southwest corner of Block 3, F. Peterswick Survey, Abstract 243, was running tubing and appeared good for about 250 bbls. of oil daily. Sam Vierson No. 1 W. P. Ferguson, north offset to the Schaeffer No. 1-A Ferguson, filled 425 bbls. of storage with oil from lime and sand encountered from 3,824 feet to 3,860 feet while testing.

### Wilbarger County

A 4,000-foot wildcat test which will seek to extend the deep production of the K.M.A. pool has been spudded in eastern Wilbarger County. Three miles west of Geier Brothers & Jackson No. 1 Ancell, and 6½ miles west of the K.M.A. production, Lloyd H. Brown and associates of Redlands, California, staked and spudded their No. 1 Waggoner Brothers in section 30, Block 3, H.&T.C. Survey.

North of this location and about 15 miles south of Electra, T. L. Moore Drilling Co. will start a 4,500-foot test on the J. E. Blackman lands also in section 30, Block 3, H.&T.C. Survey.

### Young County

One of the best producers in the James field, central Young County, was made by T. D. Humphrey of Dallas in No. 1 Peters, SW cor. section 624, T.E.&L. Survey, on the edge of the field. The well flowed 466 bbls. of 39-gravity oil in four hours from saturated Smithwick (lower Bend) lime at 3,823-3,938 feet, after treating with 10,000 gallons of acid. Allowable production in this field is now 50 bbls. per well per day. There are 47 oil wells and eight drilling wells in this increasingly active area.

## EAST TEXAS

DALLAS, Tex., Jan. 31.—Three new wildcat locations were staked in East Central Texas during the past week. In Cherokee County, J. G. Mayo and others No. 1 J. H. Bowiery, W. H. Walters Survey, is moving in rig. In Houston County, Peyton Brothers announced location for No. 1 J. N. Daniels, one-half mile north of Procella, in the J. M. Procella Survey. Archard & Biddle No. 1 Gibson, J. Bird Survey, 6 miles southwest of Rural Shade in Navarro County, was digging pits.

### Talco Pool

The second basal Glen Rose test for the Talco pool is announced. W. B. Hinton of Lockhart, driller of the discovery well in the pool, has been commissioned by the citizens of Talco, Mount Pleasant, Bogota and Paris to deepen a failure on the west side Titus County portion of the pool to the Rodessa pay. The test will be the Chenault No. 1 Jeff Saunders, C. Paine Survey, which cut the fault too low to find production in the Paluxy sand and was temporarily abandoned around 4,350 feet.

### Mabank Fault Wildcat

Another Woodbine sand wildcat in the Mabank Fault area, northwestern Henderson County, has been announced by J. C. Jones and Mallory of Mabank. These operators are reported to have assembled 2,490 acres in the area, 3 miles north of the Sherman Hunt Woodbine sand discovery well at Flag Lake. The block lies in the B. Metro, L. Navarro, B. T. Tompson and H. M. Stroude surveys. Operators have agreed to pay $2.50 an acre when surface casing is cemented.

### Anderson County

Testing was resumed at Parsons and others No. 1 Hemby, a gasser southwest of Elkhart, Anderson County, after separator was installed. A 10-hour gauge through half-inch choke showed 21.5 bbls. of white distillate and 8,150,000 feet of gas daily. Tubing pressure was 1,400 pounds and casing pressure 2,000 pounds. Closed-in pressure was 2,200 pounds. The well is producing from the upper Woodbine at 5,410-18 feet.

### Kelsey Dome

On the Kelsey dome in Upshur County, Tom Hunter and American Liberty Oil Co. No. 1 J. P. Carter, J. H. Fields Survey, is drilling massive anhydrite at 6,707 feet, with top placed at 6,520 feet.

### Gregg County

Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 E. Robertson, deep well southwest of Longview in Gregg County, is drilling hard sandstone at 8,156 feet.

## EAST TEXAS FIELD COMPLETIONS

### Gregg County

Fidelity Oil & Refining Co. No. 2 Aiken, 3,520-30 feet, 62 bbls. per hour. General American Oil Co. No. 22 Adams, 3,577-86 feet, 80 bbls. per hour; same company's No. 24 McGrede, junked and abandoned at 3,538 feet on account of crooked hole. Humble Oil & Refining Co. No. 29 Mackey, 3,627-59 feet, 32 bbls. per hour; same company's No. 30, 3,553-59 feet, 32 bbls. per hour. Midfield Oil Co. No. 8 Rodden, 3,578-79 feet, 30 bbls. per hour. Shell Petroleum Corp. No. 25 Hampton, 3,624-78 feet, 60 bbls. per hour. Showers-Moncrief No. 3 Christian, 3,564-3,612 feet, 84 bbls. per day. Sinclair Prairie Oil Co. No. 20 York, 3,564-68 feet, 90 bbls. per hour. Stanolind-Tide Water No. 14 Fanville, 3,512-62 feet, 69 bbls. per hour. Sun Oil Co. No. 14 McKinley, 3,639-82 feet, 15 bbls. per hour; same company's No. 15-B A. Tooke, 3,559-3,660 feet, 22 bbls. per hour. W. F. Turner No. 12 Jones, 3,660-3,748 feet, 60 bbls. per hour. Galvez Oil Co. No. 7 Alex, dry and abandoned 3,520 feet. Gulf Oil Corp. No. 10 Nichols, 3,684-93 feet, 25 bbls. per hour; same company's No. 27 Steel, 3,565-3,615 feet, 35 bbls. per hour. P. L. Miller No. 4-B Crim, 3,535-93 feet, 60 bbls. per hour. Wells and Gann No. 2-B Charles, 3,645-46 feet, 85 bbls. in two hours.

### Rusk County

Houston Oil Co. No. 11 Laird, 3,631-67 feet, 90 bbls. per hour. Stanolind Oil & Gas Co. No. 11 Beall, 3,662-63 feet, 32 bbls. per hour. Tide Water Oil Co. No. 18 Christian, 3,725-37 feet, 80 bbls. per hour. F. W. Fisher No. 7-A Wilson, 3,749-61 feet, 60 bbls. per hour; same company's No. 8-A Wilson, 3,749-64 feet, 60 bbls. per hour. General American Oil Co. No. 10 Thompson, 3,744-50 feet, 80 bbls. per hour. Gulf Oil Corp. No. 5 Perry, 3,623-29 feet, 7 bbls. per hour. Humble Oil & Refining Co. No. 68-A Kangerga, 3,660-70 feet, 65 bbls. per day; same company's No. 8-C Silvey, 3,728-30 feet, 75 bbls. per hour. Marco Oil Co. No. 8 Lacey, 3,688-90 feet, 10 bbls. per hour. Magnolia Petroleum Co. No. 7 Kel, 3,797-3,800 feet, 20 bbls. per hour. Marr Drilling Co. No. 7 Gassett, abandoned at 3,450 feet on account of crooked hole. Moss-Ursheil No. 7 Deason, 3,660-71 feet, 50 bbls. per hour; same company's No. 6 Griffin, 3,636-3,747 feet, 100 bbls. per hour. Pine Petroleum Co. No. 9-A Giles, 3,676-97 feet, 60 bbls. per hour. Regent Oil Co. No. 10-B Harmon, 3,756-77 feet, 60 bbls. per hour. Max Ruebin and others No. 2-A Keeling, 3,722-32 feet, 60 bbls. per hour. J. S. Smith No. 6 Frederick, 3,591-3,690 feet, 12 bbls. hourly. Ward Oil Co. No. 41 Thrasher, 3,787-3,832 feet, 51 bbls. per hour. J. N. Williams No. 5 Wylie, 3,642-70 feet, 30 bbls. per hour.

### Smith County

Weaver-Perry No. 11 Wright, 3,684-87 feet, 80 bbls. per hour.

### Upshur County

Humble Oil & Refining Co. No. 39 Edwards, 3,614-68 feet, 47 bbls. per hour; same company's No. 12 J. M. Smith, 3,640-71 feet, 35 bbls. per hour. Magnolia Petroleum Co. No. 32 Free, 3,645-55 feet, 80 bbls. per hour. Texas Co. No. 4 Williams, 3,694-95 feet, 30 bbls. per hour.

## EAST CENTRAL TEXAS COMPLETIONS

### Bowie County

Ferguson-Hill No. 1 Breckenridge, 4 miles west of Texarkana, dry and abandoned, total depth 2,950 feet.

### Anderson County

Three completions were added in the Long Lake field. H. L. Hunt No. 1 B. Brantley, 5,298-5,304 feet, 48 bbls. per day. Tide Water-Seaboard No. 7 Shaw & Cern, total depth 5,270 feet, 24 bbls. per day. Stanolind

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Oil & Gas Co. No. 1 Woodhouse, 5,256-68 feet, 65,000,000 feet of gas.

### Falls County

Bell & Hayes No. 1 Rush, dry and abandoned, total depth 1,248 feet.

### Franklin County

In the Talco field, Humble Oil & Refining Co. No. 1 Coney, 4,104-4,289 feet, 459 bbls. per day.

### Freestone County

C. E. Rossiter No. 1 Fulton, 2½ miles east of Donie, dry and abandoned at a depth of 956 feet.

### Hopkins County

In the Sulphur Bluff field, W. L. Goldston No. 10 Smith, 4,499-4,600 feet, 11 bbls. per hour.

### Titus County

At Talco, Humble Oil & Refining Co. No. 3 Belcher, 4,224-4,355 feet, 46 bbls. per day; No. 4 Groves, 4,217-4,325 feet, 400 bbls. per day.

## NORTH TEXAS COMPLETIONS

(24-hour production)

### Archer County

L. T. Burns No. 1 J. T. Richardson, 1,164 feet, dry; No. 2 J. T. Richardson, 1,194 feet, dry.

### Clay County

Bridwell Oil Co. No. 9 H. C. Edrington A, 1,107-25 feet, 100 bbls. W. H. Metzner No. 4 J. J. Taylor, 1,113-25 feet, 50 bbls.; No. 7 J. J. Taylor, 1,102-20 feet, 100 bbls.

### Cooke County

Byers and others No. 1 W. A. Scroggins, 3,051 feet, dry. Gill & Witherspoon No. 2 Mrs. O. Wilson, 1,005-35 feet, 15 bbls. Kerlyn Oil Co. No. 4 C. B. Blagg, Jr., 2,028-35 feet, 53 bbls. Pace Petroleum Co. No. 3 J. R. Winstead B, 1,165-91 feet, 350 bbls.

### Jack County

Brazos River Gas Co. No. 5 J. M. Box, 2,817-27 feet, 4,500,000 feet gas. Danciger Oil & Refining Co. No. 1 S. M. Denman, 3,130-50 feet, 550 bbls. W. R. Dearing No. 1 E. Mitchell, 2,995-3,175 feet, 175 bbls. Hanlon-Buchanan, Inc., No. 5 F. H. Rhodes, 2,281-95 feet, 25 bbls. Nelson Oil Syndicate No. 1 J. P. Eartherly, 2,765-2,800 feet, 365 bbls. O. J. Perrin No. 2 J. S. Rhodes, 3,029-3,100 feet, 650 bbls.

### Montague County

Arco Oil Co. No. 17 Mrs. M. H. Salmon E, 1,620-37 feet, 70 bbls.; No. 18 Mrs. M. H. Salmon E, 955-81 feet, 15 bbls.

### Wichita County

Bonner & Harvey No. 2 Munger B, 3,685-3,858 feet, 1,025 bbls. Consolidated Oil Co. No. 2 W. P. Ferguson, 3,668-3,850 feet, 1,150 bbls. Deep Oil Development Co. No. 15 Munger A, 3,660-65 feet, 1,200 bbls. in 14 hours. H. G. Mitchell No. 3 Fassett & Tuttle, 915 feet, dry. Perkins & Cullum No. 11 S. B. Burnett and others A, 1,935 feet, dry. Pois & Schulz No. 4 Ed Foster J, 1,245-50 feet, 185 bbls. Schaeffer Oil Co. No. 1 First National Co., 3,645-3,838 feet, 934 bbls. Siebold & Harvey No. 1 Munger, 2,361 feet, junked and abandoned. Tide Water Associated Oil Co. No. 11 W. H. Chilson, 630-40 feet, 4 bbls. Hulda B. Wallace No. 1 G. W. Lewis, 3,826-3,765 feet, 550 bbls.

### Wilbarger County

Lido Oil Co. No. 19 W. T. Waggoner C, 2,702-11 feet, 56 bbls. George M. Shanor No. 1 Waggoner B, 2,546-50 feet, 32 bbls.

### Young County

S. S. Alexander Oil Corp. No. 6 G. B. Hamilton, 951 feet, dry. Buttram Petroleum Co. No. 1 W. R. Shepherd, 4,381 feet, dry. R. T. Parkin No. 1 Young Co. Lumber Co., 610 feet, dry.

## Eastern Fields

*(Continued from Page 58)*

a gauge of 4,989,000 feet a day. The test of R. E. McCabe on the F. M. Ray, Jr., lease in Poca district, was completed at 4,883 feet. The Oriskany sand was struck at 4,863 feet and the gauge was 4,989,000 feet a day. The final gauge on the Columbian Carbon Co.'s test on the B. F. Jones farm in Elk district, was 4,762,000 feet a day with a shut-in pressure of 1,330 pounds

Three new locations were reported. In Union district, the Columbian Carbon Co. made a location on the Nelson H. Cavender farm with an elevation of 1,031 feet. In Poca district, the United Fuel located No. 4791 on the W. J. Glass farm and No. 4790 on the W. H. Morton farm north of the Humphreys Morton test.

Several wells reached the Corniferous lime during the week. In Poca district, the United Fuel Gas Co. topped that formation at 4,865 feet in No. 4761 W. H. Odell, and shut down 2 feet in the Oriskany sand in the test on the Nina Chandler farm. The Spartan Gas Co. struck the Corniferous at 4,788 feet in the test on the Charles Burdette heirs farm. In Malden district, the Owens-Illinois Glass Co. reached that formation at 5,212 feet in the L. A. Myers and others No. 12.

### Deep Tests

In Clay County, the Pittsburgh & West Virginia Gas Co. is drilling at 5,876 feet in the test on the Jesse Chapman farm in Otter district. In Jackson County, W. H. Petry is fishing at 4,716 feet in the test on the D. O. Curry farm in Ravenswood district. In Ripley district, the Potter Development Co. is reaming out at 485 feet on the William T. Chancey farm.

In Wood County, the Belmont Quadrangle Co. is shut down at 4,000 feet in the test on the C. D. White farm on account of plugged hole. This is in Steel district. In Harris district, the Potter Development Co. is drilling at 200 feet in the test starting on the W. H. Orem farm. In Boone County, the Owens-Illinois Glass Co. has reached 840 feet in No. 13 Bull Creek Coal & Land Co., in Peytona district.

## Louisiana-Arkansas Fields

*(Continued from Page 59)*

Brownfield, in section 5-19-5, cored black shale at 9,245-65 feet and is drilling below 9,411 feet in the same formation. The test encountered sand with good odor and 7 per cent porosity at 8,752-70 feet, but no reported shows below that depth.

### Choudrant Prospect

In southeast Lincoln Parish, Oakes & Easton No. 1 Griggs, section 36-18-1w, has failed to make a field discovery to date. The test cored porous lime at 5,939-41 feet and set 5½-inch casing at 6,121 feet with total depth at 6,259 feet. The oil string was perforated at 5,931-40 feet with 48 shots. Cotton seed hulls were dumped into the hole to prevent loss of returns. The test was swabbed dry, then treated with 2,000 gallons of acid. A reacidizing job took 4,000 gallons. Operators have continued swabbing and have obtained a slight show of oil which made a rainbow on the pits, and a show of gas.

### Morehouse Wildcat

W. J. Furlong No. 1 E. M. Clark, section 10-20-7e, Morehouse Parish, is shut down at 6,025 feet. Although the test is a contract depth, negotiations are under way for deepening it, and four major companies are reported aiding in financing the deeper drilling.

### Cotton Valley

The deep Bodcaw sand of Cotton Valley gained another producer during the week when Magnolia Petroleum Co. brought in No. 7 Marshall, SW SE section 21-21-10, for an initial of 630 bbls. of distillate and an estimated 8,000,000 feet of gas on a 7/16-inch choke. Tubing pressure was 2,700 pounds and casing pressure 2,900 pounds. Total depth is 8,405 feet. An increase in the allowable of gas production in the Bodcaw will possibly stimulate activity at Cotton Valley.

### Buckner Field

The Buckner field of Columbia County, south Arkansas, is again beginning to attract attention, as the Standard Oil Co. and Lillian Taubel drill tests in the vicinity of the one-well field. In Lafayette County, about three-fourths of a mile southwest of the Standard Oil Co. of Louisiana No. 1 McKean, Lillian Taubel and others No. 1 H. L. Tatum is drilling shale and lime below 3,644 feet. Anhydrite was topped at 3,279 feet and the massive anhydrite at 3,298 feet with the base of the latter at 3,432 feet. The semiwildcat is located in the northeast corner of SE NW section 18-16-22.

Due east of the Taubel test and about one-half mile southwest of the Standard producer, is the Standard's second test in the area, No. 1 Bodcaw-Barbara, in the NE cor. SE NE section 18-16-22. The company has cemented 13⅜-inch casing at 209 feet and is waiting for cement to set. High water due to local floods may hamper development in the area.

## Southwest Texas Fields

*(Continued from Page 62)*

### Brooks County

Alta Mesa field: Standard Oil Co. of Texas No. 3 Mestina Oil & Gas Co., 3,552 feet, abandoned.

### Caldwell County

Branyon field: Martel Petroleum Co. No. 6 Young, 2,340 feet, 200 bbls. pumping and flowing. Buchanan field: Hanthon-Nelson No. 2 Moore, 2,227 feet, 10 bbls. oil, 15 bbls. of water, pumping. Luling field: Philtop Oil & Gas Co. No. 1 Dorn, 2,094 feet, 300 bbls., pumping and flowing. Trio Oil Co. No. 1 Byrd, 2,090 feet, 225 bbls., pumping.

### Duval County

Benavides field: Bridwell Oil Co. No. 9 Ancira, 4,793 feet, 150 bbls., one-eighth inch choke. Glasscock Brothers No. 3 Farias, 5,381 feet, oil sand 5,373-81 feet, 110 bbls., 9/64-inch choke. Hiawatha Oil & Gas Co. No. 6 Parr, 4,748 feet, perforated casing 4,737-45 feet, 120 bbls., one-eighth inch choke. Hoffman field: Cox & Hamon No. 1 Cassas, 3,014 feet, plugged back 2,750 feet, perforated casing 2,742-44 feet, 10,000,000 feet dry gas, open tubing. Piedra Lumbre field: Magnolia Petroleum Co. No. 13 Duval County Ranch Co., oil sand 2,058-66 feet, 9 bbls. per hour, three-eighths inch choke.

### Jim Hogg County

Las Animas field: Darby Petroleum Co. No. 3-B Holbein, 1,825 feet, abandoned. Alworth field: French Oil Co. No. 8 Garza, oil sand 1,041-46½ feet, 5 bbls. per day, three-eighths inch choke.

### Karnes County

South Burnell field: Luling Oil & Gas Co. No. 17 Boyce, 3,674 feet, 4 bbls. per hour, one-half inch bottom-hole choke, 5/32-inch tubing choke.

### Live Oak County

Ezzell field: E. M. Jones No. 1-E Ezzell, oil sand 1,524-30 feet, 150 bbls., flowing by heads.

### Nueces County

Agua Dulce field: Texon Royalty Co. No. 3 Driscoll-Sevier, 7,120 feet, abandoned. Flour Bluff field: Humble Oil & Refining Co. No. 6 Roberdeau, 6,692 feet, plugged back 6,630 feet, gas well. Humble Oil & Refining Co. No. 3 Smith, 6,682 feet, abandoned. Luby field: Seaboard Oil Co. No. 9 Luby, 5,063 feet, perforated casing 5,053-62½ feet, 151 bbls., one-eighth inch choke.

### San Patricio County

Plymouth Oil Co. No. 89-C Welder, 6,201 feet, abandoned. Taft field: Humble Oil & Refining Co. No. 33 Mayo, 3,980 feet, 359 bbls., quarter-inch choke.

### Webb County

Killam field: Guy Davis No. 1 White, 2,056 feet, abandoned. O. W. Killam No. 26 Garcia, 1,997 feet, 40 bbls., pumping. Oilton field: J. A. Anderson No. 4 Martin, 1,895 feet, 185 bbls., pumping. J. M. Anderson No. 5 Martin, oil sand 1,866-67 feet, 187 bbls., pumping. Cox & Hamon No. 3 Martin, 1,959 feet, abandoned. Mountain Townsite Oil Co. No. 2 fee, 1,913 feet, 150 bbls., pumping.

### Zapata County

Comitas field: Gilcrease Oil Co. No. 1-D Haynes, 1,110 feet, 27 bbls., pumping.

### Victoria County

Hughes field: Portilla Drilling Co. No. 3 Welder, 5,093 feet, abandoned. McFaddin field: Barnsdall Oil Co. No. 2 McFaddin, 4,401 feet, 92 bbls., 7/64-inch choke.

### Refugio County

Refugio field: Union Producing Co. No. 1 Power, 8,010 feet, perforated casing 6,790-6,800 feet, 140 bbls. distillate, quarter-inch choke.

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# Among Gulf Coast Drilling Contractors

Hanthon-Nelson, Inc., which has opened offices in Houston, is drilling one of the most interesting wildcats along the Gulf Coast. It is located offshore from Jefferson County, Texas, in the Gulf of Mexico, and has reached a depth of 4,000 feet. It is being drilled for Hanthon-Nelson and I. E. Harwell. Contract was received from A. A. Cameron for a wildcat to be drilled in Chambers County and rig is being moved to the location.

Another water location which has got under way is being drilled by Loffland Brothers for the California Oil Co. of Texas and the Salt Dome Oil Corp. It is located about a mile out in Galveston Bay, offshore from Chambers County. The same contractors are moving in a heavy rotary for an outpost test in the West Beaumont area, Jefferson County, which will be drilled jointly with the Stanolind Oil & Gas Co. on C. Kyle Survey in the H. Williams Survey.

Rowan Drilling Co. has moved another rotary to the Venice dome in Plaquemines Parish, Coastal Louisiana, for the Tide Water Associated Oil Co. The discovery well was drilled by Rowan and the company's fifth well, No. 5 Manhattan Land & Fuel Co., is nearing the pay. One test is drilling below 3,500 feet at the Satsuma field in Harris County for the Amerada Petroleum Corp. and Stanolind Oil & Gas Co., while another is being spudded for the same operators in the recently opened Fairbanks field, about 2½ miles to the northeast. This field promises to be the scene of much activity within the next 90 days as numerous leases are expiring within that time. At Danbury, Rowan Drilling Co. is completing another shallow producer for themselves and the Shell Petroleum Corp., while another outfit is on location in the Lissie area, Wharton County, where Strake Petroleum Corp. No. 1 Strunk is drilling below 9,000 feet.

Glassell & Rogers of Shreveport received contract from the Continental Oil Co. for No. 1 N. H. Hirsch in the Villa Platte field, Evangeline Parish, Louisiana. This is the second well to be drilled since the completion of the discovery well.

Ownby Drilling Co. is moving in a rotary to the Fairbanks field, Harris County, for No. 1 Myers, about 3,000 feet east and slightly north of the discovery well. This acreage was obtained from the Sun Oil Co. on a "farm out."

O. W. Dyers, who opened the Weslaco field, Hidalgo County, Texas, with the completion of Atlantic Refining Co. No. 1 American Rio Grande is killing the well to reperforate the casing in an attempt to increase production. The well has been flowing approximately 19 bbls. of distillate per day from perforations at 8,998-9,005 feet and new perforations are scheduled to be made at 8,810-20 feet. Three outfits are running in the McCampbell field, and one each at Hardin and Dickinson fields for the same company.

Several new contracts are expected to be let at an early date for tests on the southwest flank of the old Orange field, Orange County, Texas, following the showing of Gulf Oil Corp. No. 1 Orange National Bank, which is preparing to run casing after a drill stem test showed several hundred feet of pipe line oil. This well is an east offset to the discovery well which opened prolific production from the Frio sand. The area is divided into many ownerships.

Glenn H. McCarthy has cored the pay in his second well in the Benavides field, Duval County, Texas, is preparing to retest his No. 1 Broussard, a possible pool opener in Jefferson County, Texas, and has reached a critical depth on his No. 2 Brown, located on the northeast flank of the Orange field.

Rutherford Drilling Co. is nearing the pay horizon in the new West Saxet field, Nueces County, Texas, where his No. 1 Stewart is below 4,400 feet. No. 14-B Cobb, located in the Van Vleck, reached a depth below 11,000 feet and the hole is being plugged back for a production test while No. 2 First National Bank, in the same field, has been spudded.

There were 28 new locations reported in the Texas Coastal district the past week, all being in established fields including Barbers Hill, Amelia, Labelle, Hardin, Orange, Livingston, Hastings, Manvel, Sandy Point, Silsbee, Dickinson, Fairbanks, Friendswood, Tomball and Mauritz.

Cron & Gracey completed another deep producer for Shell Petroleum Corp. in the Gibson field, Terrebonne Parish, Louisiana, and are drilling below 11,000 feet in the Lake Long field for the Fohs Oil Co. Other operations are reported in the Tomball and Dickinson fields in Texas for Amerada Petroleum Corp. and Stanolind Oil & Gas Co.

The nomenclature committee of the South Texas Geological Society reports naming of two new oil fields in the South Texas district.

"Burdette Wells" is the name given to the field discovered by Pat Armstrong No. 1 Trammel in the Robert H. Hunter Survey, Caldwell County.

"Loma Valdez" is the name of the field discovered by Howard Nessley No. 3 Bruni, Survey 449, Webb County.

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# Michigan Field Report

By
O. C. PRESSPRICH

# Cold Weather Retards Work; Good Wells in Four Counties

SAGINAW, Mich., Jan. 31.—Inactivity caused by severe winter weather, and a natural reaction from recent price cuts on Michigan crude oil, combined to record a dull week in Michigan oil fields. There were five oil completions in the Buckeye field, Gladwin County, none of them exceptional, and one dry hole in the northwest area; one favorable producer in Allegan County and one dry hole, and one small producer was added to the Clayton-Arenac field.

Bay County's quest for a paying producer netted one dry hole and one small commercial producer on the pump after a second acid treatment. Tests in Bentley Township of Gladwin County where eight wells are under way in the various stages, resulted in two benefiting slighting after their second acid treatment, one of these producing on the pump.

Edenville Township, Midland County, was a hot spot of the week, but with question marks as to possibilities. Early in the week Chapman Oil Co. No. 1-A State developed two showings of oil in the Dundee. The test was shut down awaiting casing, and was reported to have 200 feet of oil in the hole. Many operators regarded the Edenville showing as an indication of the so-called Beaverton trend, expected to be tapped nearer Beaverton. The Chapman test is about equidistant from Sanford and Edenville, and is located in the NW SW NE section 27-16n-1w. A scramble for leases in the vicinity indicated a possible flurry of development following the oil showing. The first saturation was noted at 3,753 feet; the second at 3,790 feet where the well was shut down. Operators claimed the finding of oil, even in small amounts, indicates favorable testing territory in view of several favorable tests to the north and west. Three miles north of the Chapman test, Sun Oil Co. No. 1-B State, C N half SE NE section 5, finished a fishing job and was cleaning out the hole after nitroglycerin shots. Favorable showings were logged prior to the shots.

### South Buckeye (Oard)

Three producers were added to the Oard or South Buckeye pool headed by R. L. Tope No. 4 Buehler, SW NW NE section 26-18n-1w, with a gauged production of 250 bbls. natural flow. The test is a further definite cementing link between the so-called midway pool and the south pool proper. The discovery section of the midway sector added Rex Oil & Gas Co. No. 3 Woodring, SE SW SE section 23-18n-1w, a 50-bbl. natural producer to the pool, while further east, Jacob Beck No. 3 Buehler, SE SW SW section 24-18n-1w, proved one of the top-notch producers, a 300-bbl. well. In view of recent results in section 24, a season of development on dormant leases is anticipated when spring arrives.

### North Buckeye (Wicklund)

Unfavorable indications pointing to abandonment of future development in the northwest sector of the Wicklund, or North Buckeye pool—especially in section 3—appeared with one dry hole and another small producer, barely rating a gauge. Sun Oil Co. No. 1 Rodman, SE SW NW section 3-18n-1w, came in dry, while the same company's No. 3 Baum, NW NW SW section 3, rated only 17 bbls. daily, after an acid treatment. Ralph LaBlanc No. 2 Campbell, SE SE NE section 12-18n-1w, to the east of the discovery section of the pool, was acidized and increased to a 175-bbl. well to rate tops for north field production of the week.

With eight wells under way in Bentley Township, Gladwin County, in various stages from rigging up to approaching the pay, second acid treatments were resorted to in attempts to increase production at two wells. McClanahan Oil Co. No. 1 Connoly, NW NW SW section 35-17n-2e, ran a net of 145 bbls. after the second acid treatment, then settled down to a production of about 50 bbls. daily on pump. The well was formerly a 40-bbl. producer before the last acid shot. Durham & Jones No. 1 LaFurgey, SE SW NE section 20-17n-2e, was an 80-bbl. daily producer after its second acid treatment. It was the first Bentley test.

### Bay County

Gulf Refining Co. No. 1 Marston, SE SW NE section 1-14n-1e, which gave unfavorable indications last week, was acidized and resulted in a 60-bbl. swab gauge, which settled to a 12-bbl. daily pump gauge. Century Oil & Gas Co. No. 1 Wilson, SE SE SE section 27-17n-3e, will be plugged and abandoned as dry.

### Allegan County

Lenoran Petroleum Co. No. 1 Delagowski, SW NW SW section 22, Doerr Township, Allegan County, another test in an effort to find a pay producer near the Salem pool, failed and was listed for abandonment. In nearby Salem Township, a highly favorable producer came in, Michigan Devonian Petroleum Co. No. 3 Huizinga, SW SW SW section 22-4n-13w, which developed 500 bbls. daily production after acid.

### Arenac County—Clayton Township

A small producer was added to the Arenac field when Weber Oil Co. No. 5 Whiting, NW NE NE section 10-20n-4e, started at 25 bbls. natural flow.

### Isabella County

Pure Oil Co. No. 2 Lathan heirs, SE SE SE section 32-15n-6w, Sherman Township, Isabella County, developed into a 350-bbl. producer after it was acidized.

Leased acreage for oil and gas prospecting purposes in Michigan is on the increase, figures released as of January 1 indicate. A gain of 46,571 acres under lease is indicated January 1 this year over figures of January 1, 1937.

A total of 1,727,171 acres were reported on lease January 1, 1938, in comparison to 1,580,600 a year ago. Four of the major operators in Michigan each has in excess of 250,000 acres under lease this year. The largest lease holders in Michigan are Sun Oil Co., Gulf Refining Co., Pure Oil Co., and Shell Petroleum Corp.

# Osage Lease Sale Found Few Buyers; Low Prices

Oil and gas leases on 71 tracts of Indian lands were sold at the first Osage sale of 1938, held in Pawhuska, Okla., last Wednesday, for bonuses totaling $27,950.

The highest amount for a lease was paid by Carter Oil Co. for NW section 26-25-6, near the South Burbank area, the successful bid being $5,100. The most costly 640-acre tract was bought by Indian Territory Illuminating Oil Co. for $2,000. Norbla Oil Co. took 14 tracts, largest number taken by any one company.

A total of 243 tracts were offered, the following being leased:

EAST SIDE

| T.No. | Description | Acres | |
|---|---|---|---|
| 1 | NE 32-20-12 | 160 | $300, W. L. Martin |
| 2 | Fr. SE 32-20-12 | 92.33 | $100, W. L. Martin |
| 3 | NW 33-20-12 | 160 | $100, W. L. Martin |
| 4 | Fr. SW 33-20-12 | 91.43 | $100, W. L. Martin |
| 5 | Fr. SE 15-21-12 | 63.08 | $100, W. C. Norris |
| 11 | Fr. NE 3-24-12 | 56.67 | $100, E. R. Neuman |
| 13 | NE 7-25-12 | 160 | $100, Arthur Oil Co. |
| 21 | NW unleased portion of SE 33-26-12 and Fr. NE unleased portion of SW 33-26-12 | 80 | $100, I.T.I.O. |
| 36 | NE 23-20-11 | 160 | $100, E. A. Meyer |
| 38 | SW 24-20-11 | 160 | $100, S'nd Spgs. Home |
| 40 | NE 26-20-11 | 160 | $100, S'nd Spgs. Home |
| 41 | NE 30-21-11 | 160 | $1,000 Sd. Spgs. Home |
| 43 | SW 5-21-11 | 160 | $1,500, Ray Branstetter |
| 46 | NW 16-21-11 | 160 | $100, Texokan Oil Co. |
| 47 | SW 16-21-11 | 160 | $100, Texokan Oil Co. |
| 48 | NE 17-21-11 | 160 | $100, Texokan Oil Co. |
| 53 | NE 23-22-11 | 160 | $100, Ray Branstetter |
| 54 | NW 23-22-11 | 160 | $100, Ray Branstetter |
| 65 | NE 12-26-11 | 160 | $100, William Vanry |
| 71 | NW 22-27-11 | 160 | $100, Norbla Oil Co. |
| 73 | NE 34-27-11 | 160 | $100, Norbla Oil Co. |
| 74 | SE 34-27-11 | 160 | $100, Norbla Oil Co. |
| 76 | Fr. SE 33-20-10 | 96.06 | $100, P. T. O'Herin |
| 77 | NW 2-21-10 | 160 | $100, Devonian Oil Co. |
| 78 | SW 2-21-10 | 160 | $100, Devonian Oil Co. |
| 82 | NW 25-22-10 | 160 | $100, L. L. Wiles |
| 89 | SE 20-25-10 | 160 | $100, Devonian Oil Co. |
| 90 | SW 21-25-10 | 160 | $100, Devonian Oil Co. |
| 108 | NE 33-21- 9 | 160 | $100, M. Ringgold |
| 109 | NW 1-22- 9 | 160 | $100, Mary L. Bruner |
| 110 | NE 2-22- 9 | 160 | $100, Texokan Oil Co. |
| 111 | SE 2-22- 9 | 160 | $100, Texokan Oil Co. |
| 118 | SE 21-22- 9 | 160 | $325, Ida Rabinowitz |
| 119 | SW 21-22- 9 | 160 | $175, E. A. Meyer |
| 126 | SW 5-24- 9 | 160 | $100, Norbla Oil Co. |
| 128 | SW 8-24- 9 | 160 | $800, Norbla Oil Co. |
| 147 | NE 32-22- 8 | 160 | $200, W. H. Twyman |
| 148 | NW 32-22- 8 | 160 | $100, W. H. Twyman |
| 149 | NE 34-22- 8 | 160 | $100, Moore Oil Co. |
| 150 | SE 34-22- 8 | 160 | $100, Moore Oil Co. |
| 151 | NW 35-22- 8 | 160 | $100, Moore Oil Co. |
| 152 | NE 36-22- 8 | 160 | |
| 154 | NE 22-23- 8 | 160 | $100, Devonian Oil Co. |
| 155 | SE 22-23- 8 | 160 | $100, Devonian Oil Co. |
| 156 | SW 23-23- 8 | 160 | $100, Devonian Oil Co. |
| 157 | SE 14-24- 8 | 160 | $1,600, Tulsa Osage Oil |
| 165 | NW 20-27- 8 | 160 | $100, Norbla Oil Co. |
| 166 | NW 15-29- 8 | 160 | $100, W. M. McNab |
| 167 | SW 15-29- 8 | 160 | $100, W. M. McNab |
| 168 | NE 16-29- 8 | 160 | $100, W. M. McNab |
| 169 | SE 16-29- 8 | 160 | $100, W. M. McNab |

WEST SIDE

| T.No. | Description | Acres | |
|---|---|---|---|
| 173 | NE 13-24- 7 | 160 | $200, Norbla Oil Co. |
| 174 | NW 13-24- 7 | 160 | $350, Texas Co. |
| 175 | NW 26-24- 7 | 160 | |
| 176 | NW 17-25- 7 | 160 | $600, Norbla Oil Co. |
| 177 | NE 18-25- 7 | 160 | $600, Norbla Oil Co. |
| 178 | SW 19-25- 7 | 160 | $400, Norbla Oil Co. |
| 181 | SW 28-25- 7 | 160 | $800, Midco Oil Corp. |
| 182 | NW 29-25- 7 | 160 | $700, Shell Oil Corp. |
| 183 | SE 29-25- 7 | 160 | $900, Midco Oil Co. |
| 184 | SW 29-25- 7 | 160 | $1,100, Shell Oil Corp. |
| 186 | SE 2-27- 7 | 160 | $200, Thomas Dietle |
| 194 | NE 4-23- 6 | 160 | $1,200, Carter Oil Co. |
| 195 | NW 4-23- 6 | 160 | $1,600, Carter Oil Co. |
| 200 | NW 26-25- 6 | 160 | $5,100, Carter Oil Co. |
| 205 | SE 9-26- 5 | 160 | $200, Norbla Oil Co. |
| 206 | SW 10-26- 5 | 160 | $200, Norbla Oil Co. |
| 207 | NW 15-26- 5 | 160 | $200, Norbla Oil Co. |
| 208 | NE 16-26- 5 | 160 | $200, Norbla Oil Co. |
| 229 | sec. 28-29- 0 | 640 | $200, Fred Roch |
| 234 | W½ sec. 7-24-7 and E½ sec. 12-24-6 | 640 | $2,000, I.T.I.O. |
| 241 | sec. 36-26- 6 | 640 | $400, Midco Oil Co. |
| 243 | sec. 16-25- 3 | 640 | $400, G. K. Sutherland |

## West, Central and Panhandle Texas

By MITCHELL TUCKER

# Wildcats Are Started in Eight Counties; An 8,000-Foot Test

FORT WORTH, Tex., Jan. 31.—Of the 46 new locations made in West Texas last week, nine are for wildcat tests, one each in Concho, Dawson, Garza, Sterling, Stonewall, Tom Green and Ward counties, and two in Yoakum County. The tests in Concho, Garza, Tom Green and Sterling counties will have the Ordovician series as their objectives. There were 49 completions in the district last week, several of which made important extensions to present producing areas.

### North Permian Basin

While drilling and exploration in the Permian lime continues at an increasing rate in counties in the northern part of the Permian Basin, plans for the territory's first Ordovician test were announced in the past week. Fred S. Wright and J. W. McMillen, Midland operators, are preparing to deepen a well drilled by American Liberty Oil Co., known as No. 1 Cowden, in southwestern Andrews County, about 50 miles north and slightly west of the nearest Ordovician production in the Sand Hills field. This test was abandoned at 5,001 feet with an 8½-inch hole, after topping the Permian several hundred feet high but finding it tight and nonproductive. Contract depth for this northernmost deep test will be 8,000 feet.

The Bennett pool in southeastern Yoakum County was given a one-half mile extension to the west by the completion of Honolulu Oil Corp. No. 3-667 Ruth Bennett, flowing 826 bbls. daily from 5,096-5,242 feet. Five other wells are drilling in that area. Crump & Black have let contracts for the immediate drilling of four wells in the Bennett field upon two 80-acre tracts held by them in section 631, Block D, John H. Gibson Survey, on the north edge of the present producing limits.

The Duggan field in southeastern Cochran County, northernmost producing field in the Permian Basin, received its fourth and largest producer, extending its limits half a mile to the southwest. Mel Ingleright and E. E. Fogelson No. 2 Duggan, Labour 14, League 55, Oldham County school land, topped the Permian at 5,025 feet, and at a total depth of 5,073 feet produced 611 bbls. of oil in 24 hours through 1-inch tubing choke, after shooting with 160 quarts and acidizing with 2,000 and 3,000 gallons on stage treatment. The discovery well in that field, Honolulu and Cascade No. 1 Duggan, made an initial flow of 396 bbls. daily

### Commission Hearings

One of the most important Railroad Commission hearings in West Texas for the year will be held at Midland, Tex., on Monday, February 7. Principal subject under discussion will be the acceptance of testimony needed in determining and fixing efficient gas-oil ratios for wells in the North Cowden, South Cowden, Goldsmith and Penwell pools in Ector County; Emperor, Henderson, Kermit, Keystone and Scarborough pools of Winkler County; Fuhrman and Means pools in Andrews County; Sand Hills and Waddell pool fields in Crane County; and the Wasson field in Gaines-Yoakum counties.

In addition, the commission will receive evidence from which to determine the limits of the Penwell, Jordan and Waddell fields, or to classify the area as one common reservoir and make allocations upon a similar basis.

The new Pecos County field will be the subject for a special hearing following the one on gas-oil ratios, after which rules and regulations for that area will be issued.

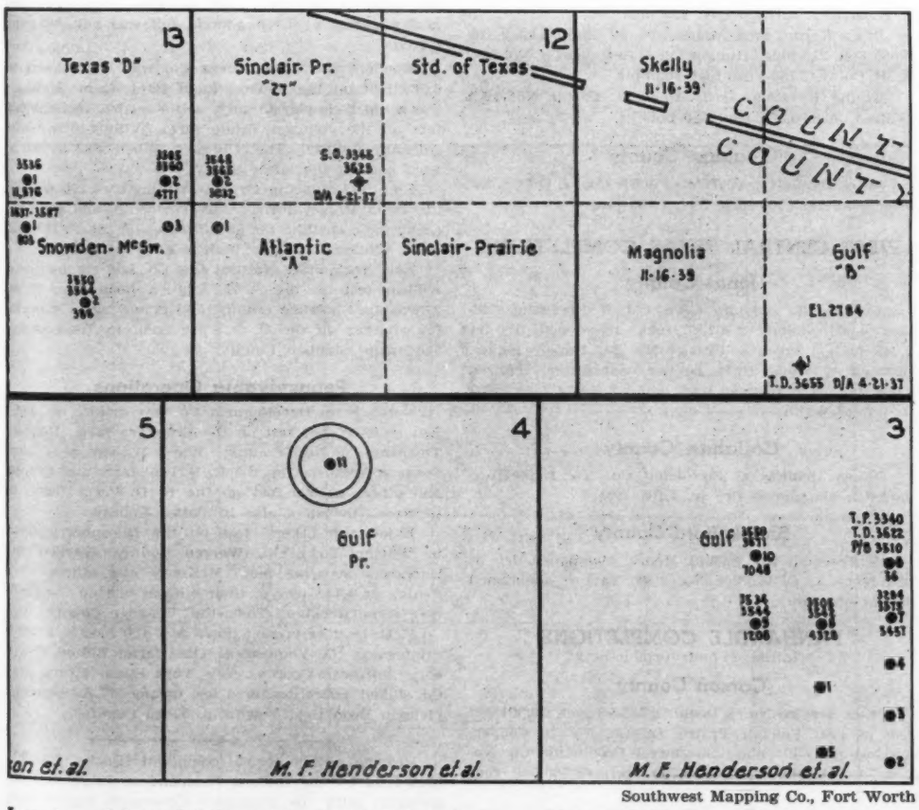
### Jordan-Waddell Link

Gulf Oil Corp. No. 11 Henderson, about midway between the Waddell and Jordan pools, in northern Crane County, presented justification for linking the two areas as one when it flowed at the rate of 40 bbls. hourly from 3,527-3,528 feet. The hole will be deepened into the saturated Permian before making production tests, but this early gauge from 1 foot of penetration makes the area appear very attractive. Gulf No. 10 Henderson, on the northwest edge of the Waddell field, gauged 7,408 bbls. daily upon completion a few months ago.

### Ordovician Prospect

Deep exploration by 18 wells now drilling in the southern basin area, all having production in the Ordovician series as their objective, continues to be led by the promising flow made by Magnolia Petroleum Co.'s deep test in the Imperian area of northern Pecos County. Magnolia's No. 1 J. H. McKee, at a total depth of 5,294 feet, made one 45-minute flow last week before the tubing sanded up. The last several days have been spent in pulling tubing and running packer with perforations, designed to remedy the clogging of tubing by caving sands when on the production tests.

Floyd C. Dodson No. 1-A Texas American Syndicate, deep Ordovician test in northern Brewster County 68 miles southwest of Magnolia No. 1-A McKee, topped the Simpson at 6,733 feet and is drilling a section quite similar to the McKee well. Total depth is now 7,062 feet, where operations are temporarily suspended while repairing rig.




Southwest Mapping Co., Fort Worth

*Location of Gulf Oil Corp. No. 11 M. F. Henderson, which is linking the Waddell field (to the southeast) and the Jordan field (to the northwest), in this fast expanding producing area of northern Crane County. After taking only 1 foot of penetration, the well gauged 40 bbls. on preliminary testing*

## WEST CENTRAL TEXAS

### Avoca Field

The Avoca field of northeastern Jones County gained its eleventh producer when Iron Mountain Oil Co. and Humble Oil & Refining Co. No. 2 H. B. Haterius flowed 880 bbls. in 3 hours and 10 minutes as tubing was being run. Saturated Palo Pinto was drilled at 3,254-68 feet. Nineteen wells are drilling in the field.

Separation of the Avoca field of northeastern Jones County and the Ivy area of northwestern Shackelford County, which were at one time thought to be one continuous reservoir, was established last week, when Bells Wells No. 1 R. L. Pond, situated about midway between the two producing areas in the Palo Pinto limestone, drilled to 3,450 feet in hard lime without picking up showings of either oil or water.

Thomas D. Humphrey No. 1 Alston, 5 miles north of Avoca, was abandoned as dry after encountering salt water at 3,255 feet. The well was first acidized to test a slight showing in the Palo Pinto lime, topped at 3,243 feet.

Superior Oil Corp. (Tulsa) spudded its No. 1 T. G. Hendrick in southeastern Haskell County, about 10 miles northeast of the Avoca field, and will seek production from the same producing level, expected at about 3,200 feet.

J. V. Howell of Wichita Falls has let contract for the drilling of a 4,000-foot Ellenburger test, No. 1 E. I. Vestal, 2 miles northeast of Cross Plains, Callahan County, and 12 miles south of Phillips Petroleum Co.'s deep test, No. 1 L. Cozart, drilling for the same pay. It is also within half a mile of a previous Ellenburger dis-

covery well which went dry after producing a short time.

F. B. Parriott of Tulsa let contract to Thurman & Lipscomb for a combination rotary and cable tool project to 5,500 feet in northwest Stonewall County on the H. T. Carlisle ranch. It is in the center of a 13,000-acre block in the H.&T.C. Survey, about 25 miles north of the Rotan field in Fisher County.

The Ellenburger lime production in the Hickok pool of Eastland County was extended northwesterly almost a mile by the completion of Lone Star Gas Co. No. 1 B. T. Cozart, flowing at the rate of 400 bbls. daily, from pay at 3,966-71 feet, total depth.

The Kadane Brothers of Wichita Falls, who developed the prolific sand production on the west side of the K.M.A. field late in 1937, are preparing to drill an outpost to the Lewis field of Jones County soon. Location will be in section 49, Block 15, T.&P. Survey.

The Rotan field of Fisher County received its only pipe line outlet last week, as T. E. Patton completed his 3-mile 2-inch line from Sunray Oil Co.'s properties to his small refinery recently moved to Rotan from Garza County. Humble Pipe Line Co. also began running crude through its newly completed Avoca-Hawley field line, and also gave the Lewis pool its first pipe line outlet through a 2-inch spur connection to the Avoca-Hawley line.

## PANHANDLE DISTRICT

The Sherman County wildcat of the Indian Territory Illuminating Oil Co. in section 404, Block 1-T, T.&N.O. Survey, continues to head important developments in the Panhandle area. At present only dry gas has been found but the hole (total depth 3,040 feet) is several hundred feet in the Dolomite gas pay, and it is expected that deeper formations will be tested before completion. Further gas increase was noted when drilling from 3,015 to 3,040 feet, the volume jumping from about 25,000,000 to 29,000,000 feet daily. Elevation at this location is 3,599 feet above sea level.

## WEST TEXAS COMPLETIONS

West Texas completions of the week, with the sand records and initial 24-hour production of the oil wells, were as follows:

### Crane County

In the Jordan area, Sinclair Prairie No. 2-23 University, 3,424-3,599 feet, 150 bbls.; same operator's No. 2-24, 3,490-3,612 feet, 115 bbls.

### Ector County

In the Connell area, J. Worsham No. 1 Connell, 3,425-3,660 feet, 632 bbls. Walter Donnelly No. 1 Connell, 3,442-3,667 feet, 473 bbls. E. E. Fogelson No. 7-B University, 3,375-3,642 feet, 675 bbls. Oil Well Drilling Co. No. 1 W. E. Connell, 3,364-3,640 feet, 424 bbls. Fogelson No. 3-A University, 3,363-3,560 feet, 535 bbls.

In the Foster area, Barnsdall No. 4 Johnson, 4,208-85 feet, 538 bbls.

In the North Cowden area, Sun Oil Co. No. 3-C O. B. Holt, 4,137-4,351 feet, 392 bbls. Owenwood Pool No. 2 Wight, 4,075-4,228 feet, 476 bbls.

In the Goldsmith area, Landreth No. 3-L Scharbauer, 4,155-4,200 feet, 1,214 bbls. Amerada Petroleum Corp. No. 5 Cummins, 4,195-4,275 feet, 616 bbls. Gulf Oil Corp. No. 64 Goldsmith, 4,130-4,210 feet, 504 bbls. Humble Oil & Refining Co. No. 5-B Scharbauer, 4,206-50 feet, 1,700 bbls.

In the Harper area, Broderick & Calvert No. 5-C Cowden, 4,075-4,280 feet, 1,381 bbls. Oil Well Drilling Co. No. 2 Cowden, 4,082-4,287 feet, 499 bbls. A wildcat, Oil Well Drilling Co. No. 1 E. F. Cowden, 4,082-4,287 feet, 499 bbls.

### Fisher County

In the Rotan area, Sunray Oil Co. No. 7 Robinson, 3,526-3,852 feet, 421 bbls. A wildcat, C. A. Daniels and J. B. Rhodes No. 1 J. J. Nickless, temporarily abandoned at 3,340 feet.

### Howard County

In the Chalk-Roberts-Settles area, Jamieson-Pollard-Foster No. 1-B Chalk, 2,908-40 feet, 924 bbls. Pure Oil Co. No. 16 Otis Chalk, 2,856-3,158 feet, 547 bbls. Humble Oil & Refining Co. No. 5 Douthitt, 2,835-3,005 feet, 1,110 bbls.

### Loving County

A wildcat, Woodley Petroleum Co. No. 1 Kloh, 3,941-63 feet, 90 bbls.

In the Mason area, Michigan Gas & Oil Co. No. 6 Kyle, 3,930-71 feet, 227 bbls.

In the Wheat pool, Standard of Texas No. 9 Reagan & McElvain, 4,253-4,275 feet, 106 bbls.

### Glasscock County

In the Chalk-Roberts-Settles area, Continental Oil Co. No. 4 Gilbreth, 2,476-2,532 feet, 539 bbls.; No. 3-C Chalk, 3,227-39 feet, 515 bbls.

### Jones County

In the Avoca area, Iron Mountain Oil Co. No. 3 Jones-Stasney-Bowden, 3,182-3,200 feet, 300 bbls.

In the Hawley area, T. D. Humphries No. 5 Henery Dorsey Estate, 2,324-31 feet, 1,200 bbls.

In the Lewis area, Bert Field No. 1 Carter, 1,880-90 feet, 300 bbls.

In the Sayles area, Condor Petroleum Co. No. 2 C. W. Langsdon, dry and abandoned at 2,485 feet. Lewis production Co. No. 10 Henry Sayles, Jr., 1,969-92 feet, 227 bbls.

### Pecos County

In the Yates area, Gulf Oil Corp. No. 28-B Smith, 1,818-28 feet, 79 bbls.

### Upton County

In the McCamey area, Stanolind Oil & Gas Co. No. 1 Burleson, 2,105-49 feet, 120 bbls. Continental Oil Co. No. 17 Reese, 2,360-2,475 feet, 182 bbls. Humble Oil & Refining Co. No. 8-B Ricker, 2,380-2,411 feet, 393 bbls. Blaine Oil Co. No. 3 Powell, 2,415-2,504 feet, 37 bbls.

### Ward County

In the Grand-Falls area, Richardson Oils, Inc. No. 32-B Johnson, 2,390-2,685 feet, 66 bbls. Texas Pacific Coal & Oil Co. No. 23 James, 2,350-2,510 feet, 233 bbls. Sidwell & Meyers No. 5 Cannon, 2,250-2,369 feet, 100 bbls.

In the Hathaway area, Standard of Texas No. 10 Adams, 2,450-2,950 feet, 252 bbls.

In the Hutchins area, Gulf Oil Corp. No. 95 Hutchins, 2,540-2,763 feet, 996 bbls. A wildcat, M. J. Delaney No. 1 J. E. Cooper, dry and abandoned at 3,021 feet.

### Winkler County

In the Henderson area, Stanolind-Westbrook No. 3 I. Hendricks, 3,030-90 feet, 223 bbls.

In the Kermit area, Atlantic No. 2-L Hendricks, 2,820-3,085 feet, 215 bbls. Humble Oil & Refining Co. No. 27-C M. R. Colby, 2,785-3,070 feet, 602 bbls.

In the Keystone area, Amon G. Carter No. 19-A Walton, 3,280-3,385 feet, 589 bbls.

### Yoakum County

In the Bennett area, Texas Pacific Coal & Oil Co. No. 3 R. Bennett, 5,106-5,250 feet, 1,755 bbls.

## WEST CENTRAL TEXAS COMPLETIONS

### Jones County

A. J. Riddle and others No. 1 J. D. Freeman, acidized 4,000 gallons 2,467-87 feet, abandoned dry at 2,645 feet. Ungren & Frazier No. 2-G Dorsey Estate, pumped 123 bbls. fluid, 20 per cent water, acidized 2,000 gallons at plugged back depth 2,154-74 feet, 2,497 feet total depth.

### Callahan County

Beams Drilling & Producing Co. No. 15-D I. N. Jackson, abandoned dry at 1,195 feet.

### Shackelford County

M. Freeman No. 1 Will Moore, abandoned dry at 623 feet. A. C. Walker No. 2 G. Taylor, abandoned dry at 430 feet.

## PANHANDLE COMPLETIONS
(Initial 24-hour production)

### Carson County

Cities Service No. 8 Deahl, 2,738-55 feet, 10,301,000 feet of gas. Sinclair Prairie Oil Co. No. 10 Cooper, 3,064-94 feet, 494 bbls. Southwest Production Co. No. 1 L. C. McConnell, 2,565-2,700 feet, 68,765,000 feet of gas.

### Gray County

Cambrian Oil Co. No. 5 Cole, 3,146-3,257 feet, 515 bbls.; No. 7 Barrett, 3,145-3,246 feet, 682 bbls. King Oil Co. No. 10 Volmert, 3,170-3,285 feet, 374 bbls. Moran Bros. No. 1 E. W. Osbourne, 2,610-2,690 feet, 4,300,000 feet of gas. Stanolind Oil & Gas Co. No. 9 Kinzer, 3,265-3,310 feet, 326 bbls.

### Hutchinson County

Holmes and others No. 9 Quinn, 3,036-3,105 feet, 668 bbls. Stansylvania Oil Co. No. 2 Belle Wisdom, 3,005-3,098 feet, 601 bbls. Travelers Oil Co. No. 6 Haile A, 3,015-87 feet, 844 bbls. Stanolind Oil & Gas Co. No. 12 Haile A, 3,008-85 feet, 501 bbls.

### Wheeler County

Shell Petroleum Corp. No. 1 Albright, dry and abandoned at 2,437 feet.

## New York-Penna. Gas Fields

COUDERSPORT, Pa., Jan. 31.—The twenty-second completion in the Woodhull field of Woodhull Township, Steuben County, New York, was recorded when Sylvania Corp. drilled in its well on the E. G. Husted farm.

The well had an initial open flow of 10,000,000 feet. It was completed at a total depth of 4,199 feet, 4 feet under the Oriskany sand which was found at 4,174-95 feet. This well, which was completed on January 15, had an initial rock pressure of 1,520 pounds.

Three other Woodhull tests are nearing completion as is another in Troupsburg Township, same county.

North Penn Development Corp. reached the Oriskany sand at 2,823 feet in its test on the E. G. Husted farm. This company also has a location on the J. Seeley farm.

Belmont Quadrangle Drilling Co. topped the Onondaga at 4,114 feet on the John Allen farm and cased to 4,135 feet. Another test to reach the Onondaga was that of Williamsport Oil & Gas Co. on the Della Lampson farm, which reached this formation at 3,756 feet and was drilling at 3,774 feet.

In other Woodhull operations Sylvania Corp. was shut down at 4,093 feet, in the Onondaga, on the John Allen farm; Clancey and others were bailing water at 3,959 feet on the M. Hargraves farm; New York State Natural Gas Co. and North Penn Development Corp. have locations on the Lyle Wheatcraft and J. Seeley farms.

New York State Natural Gas Co.'s test on the Franklin Miller farm, in new territory in Troupsburg Township, Steuben County, drilled into the Oriskany at 4,209 feet. The first showing was at 10 feet in the sand. It gauged 11,500,000 feet with an initial rock pressure of 1,760 pounds, but was not yet completed.

North Penn Development Co. was shut down at 6,564 feet on the Federal Land Bank farm, Montour Township, Schuyler County, and was drilling at 4,065 feet on the Johnson Estate farm, Willing Township, Allegany County. The Tulley was believed to be at 4,063 feet in the latter test.

Empire Producing Co. was drilling at 2,170 feet on the Della Mulvey farm, Alma Township, and Belmont Quadrangle Drilling Co. at 2,349 feet on the F. Hilligas farm, Willing Township, both in Allegany County.

New York State Natural Gas Co. has rig up for a wildcat test on the S. H. English farm, Van Etten Township, Chemung County, and is moving in material for another on the C. D. Carr farm in West Union Township, Steuben County.

### Pennsylvania Operations

North Penn Development Co. was drilling at 8,063 feet in its rotary test on the Crawford farm, Keating Township, Potter County. Ward Wasson was shut down at 5,180 feet on the R. B. Hall farm and French and others at 800 feet on the H. O. Perry farm, in Genesee Township, also in Potter County.

Evjen and others' test on the Dusenberry farm in Watson Township, Warren County, reached the Onondaga at 4,407 feet. McKenry and others were fishing at 4,413 feet in their wildcat test on the Stellman farm, Rockland Township, Venango County.

F. C. Deemer is shut down at 7,100 feet in a wildcat test on the Verstine & Kline farm, Eldred Township, Jefferson County. New York State Natural Gas Co. staked a location for a test on the W. A. Simmons farm in Brookfield Township, Tioga County.

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Hearing on the formal complaint (Docket No. 27,822) filed by the Indiana Independent Petroleum Association with the Interstate Commerce Commission pleading for an adjustment on the present 6.6 pounds per gallon now being used in computing freight rate charges on gasoline shipments is to be held before Examiner Disque at 10 a.m., March 21, 1938, Hotel Morrison, Chicago.

# California Field Report

By
L. P. STOCKMAN

# Deepest Well in the World Still Active at 12,792 Feet

LOS ANGELES, Calif., Jan. 31.—Continental Oil Co. established a world's record for deep drilling a few days ago when No. 2-A Kern County Land, a wildcat in the Wasco district of Kern County, passed the 12,786-foot level. The latest report from the well had the crew coming out of the hole with a core at 12,792 feet, and it is the intention to drill ahead as far as possible.

There is a very decided thickening of brown shale in the Wasco area and consequently some doubt exists as to whether Continental has found the interval containing the Rio Bravo sand, which Union Oil Co. proved highly productive in the Rio Bravo field of Kern County in November, 1937.

The previous record holder on depth was No. 103 McElroy of Gulf Oil Corp. in Upton County, West Texas, which reached a depth of 12,786 feet in May, 1935. This was the first well to reach 12,000 feet and has the distinction of being the first well in which 10,000 feet of casing was landed.

The second deepest well in California is No. 8 Kern County Land in section 11-30-26, a joint wildcat of Superior Oil Co. and Union Oil Co., northeast of the Ten Section field and southeast of the Greeley field. This wildcat encountered mechanical trouble and was abandoned at 12,618 feet, after failing to find commercial production in either the Stevens or Rio Bravo sands.

Union Oil Co. No. 1-34 Kern County Land in the Rio Bravo field of Kern County is the world's deepest commercial producer at 11,302 feet, but will probably yield this record to one of the several other wells now drilling in that area as future completions will be given a greater penetration in the Rio Bravo zone. This productive horizon is believed to be at least 300 feet thick, and Union Oil Co.'s discovery well has penetrated only 82 feet. Union Oil Co. is writing off 20,893 feet of hole by abandoning No. 19 Chapman in the Richfield district as a duster at 10,496 feet and No. 35 Howard Park in the Rosecrans field at 10,397 feet and may increase this total to 32,207 feet in the near future by abandoning No. 100 Bell in the Santa Fe Springs field at 11,314 feet. An attempt will be made to develop upper zone production on the way out.

**TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS**

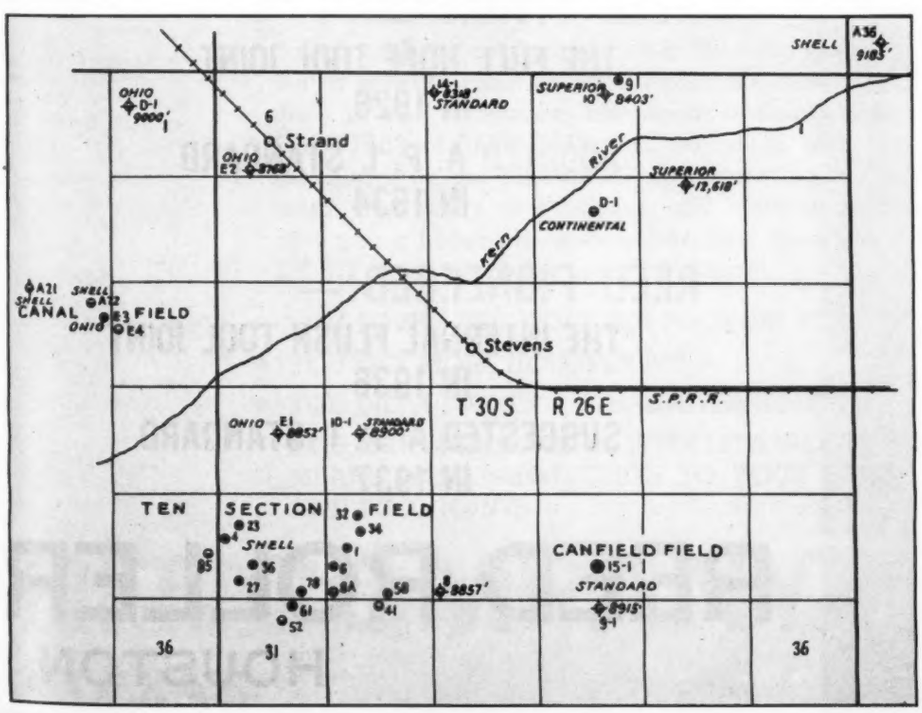
| | January 21 | | January 14 | | | |
|---|---|---|---|---|---|---|
| | Total this week | Daily average | Total last week | Daily average | This year to date | Same time last year |
| Intercoastal-domestic: | | | | | | |
| Diesel and gas oil | ..... | ..... | ..... | ..... | ..... | 70,808 |
| Gasoline | 65,685 | 9,389 | 122,959 | 17,565 | 188,644 | 79,106 |
| Kerosene | 59,885 | 8,555 | ..... | ..... | 50,885 | ..... |
| Foreign exports: | | | | | | |
| Crude oil | 845,703 | 120,815 | 159,345 | 22,764 | 1,128,544 | 178,787 |
| Fuel oil | ..... | ..... | 275,873 | 39,410 | 275,873 | 1,166,503 |
| Diesel and gas oil | 138,579 | 19,797 | 64,634 | 9,233 | 285,644 | 666,788 |
| Gasoline | 93,942 | 13,420 | 77,312 | 11,045 | 251,100 | 270,169 |
| Kerosene | 13,516 | 1,931 | ..... | ..... | 122,026 | 135,922 |
| Coastwise-domestic: | | | | | | |
| Crude oil | 320,343 | 45,763 | 64,928 | 9,275 | 524,313 | 412,302 |
| Fuel oil | 384,858 | 54,980 | 235,587 | 33,655 | 1,025,975 | 567,185 |
| Diesel and gas oil | 68,024 | 9,718 | 9,643 | 1,378 | 121,456 | 50,092 |
| Gasoline | 375,757 | 53,680 | 182,068 | 26,010 | 991,196 | 748,075 |
| Kerosene | 2,170 | 310 | 9,201 | 1,314 | 18,077 | 2,199 |

**TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Intercoastal-domestic: | | | | | | |
| Diesel and gas oil | ..... | ..... | ..... | ..... | ..... | 75,895 |
| Foreign exports: | | | | | | |
| Crude oil | ..... | ..... | 245,949 | 35,136 | 245,949 | 244,600 |
| Fuel oil | ..... | ..... | 26,031 | 3,719 | 26,031 | ..... |
| Diesel and gas oil | ..... | ..... | 98,893 | 14,128 | 98,893 | 214,389 |
| Gasoline | ..... | ..... | 66,122 | 9,446 | 66,122 | 246,242 |
| Kerosene | ..... | ..... | 39,946 | 5,707 | 39,946 | 17,936 |
| Lubricants | ..... | ..... | ..... | ..... | ..... | 14,416 |
| Coastwise-domestic: | | | | | | |
| Fuel oil | 181,216 | 25,889 | 99,437 | 14,205 | 450,435 | 358,821 |
| Diesel and gas oil | 30,904 | 4,415 | 45,612 | 6,516 | 115,932 | 58,124 |
| Gasoline | 157,929 | 22,561 | 214,128 | 30,590 | 570,268 | 296,502 |
| Kerosene | 18,607 | 2,658 | 22,811 | 3,259 | 59,558 | 3,367 |

## New Field

Standard Oil Co. appears to have discovered a new oil field 2 miles east of the Ten Section field of Kern County, and if proven it will be designated as the Canfield field. Standard's discovery well, No. 15-1 Kern County Land, in section 27-30-26, was completed flowing 243 bbls. of 28.3-gravity oil and 400,000 feet of natural gas per day from 8,072 feet after the hole had been carried down to 8,140 feet and plugged back to completion depth. The hole was finished with 93 feet of 5-inch liner, including 60 feet of 60 mesh landed at 8,071 feet. After completion, the production ranged from 1,300 bbls. per day to 240 bbls. per day. Present production is around 187 bbls. per day. It would appear that the lower part of the perforated is sanded up and requires a clean-out job, but Standard will not do any further work on the well for the time being unless production ceases.




*Standard Oil Co. is believed to have discovered a new oil field about 2 miles east of the Ten Section field of Kern County by completing No. 15-1 Kern County Land as a producer*

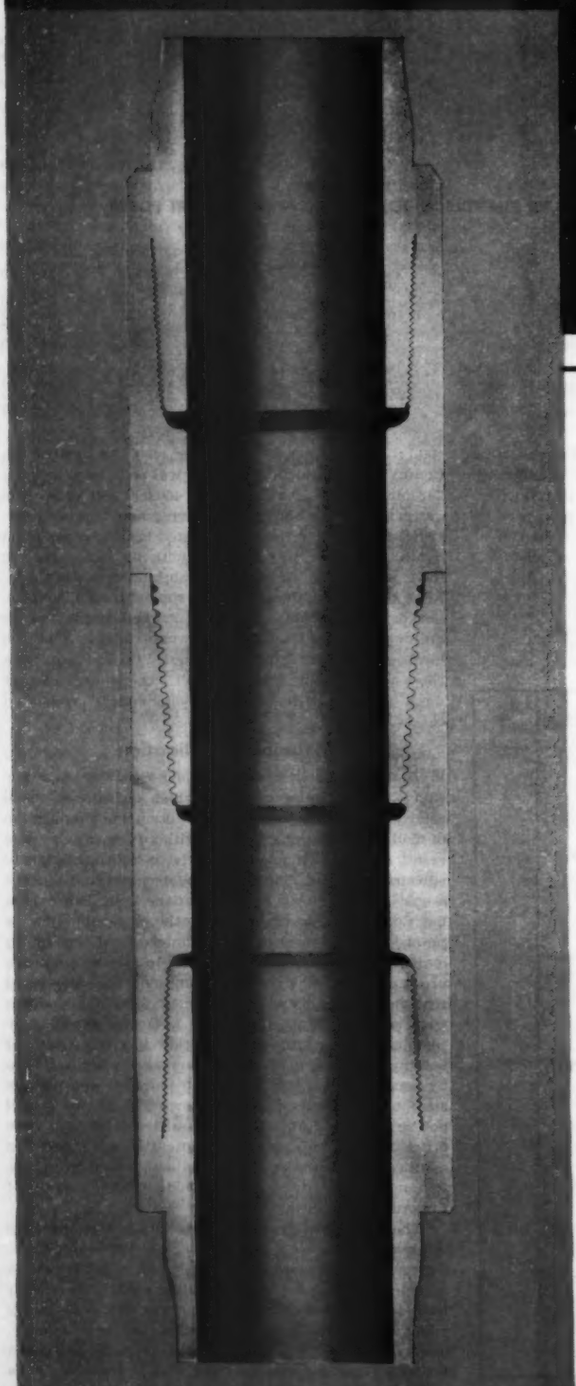
## Wilmington Litigation

Development work in the Long Beach Harbor section of the Wilmington field, which has already been retarded for more than six months during preparation of drilling regulations, is faced with a further delay as a result of litigation involving title to both surface and subsurface rights. This litigation has resulted in such a snarl in the harbor section that the Long Beach Harbor Commission has appealed to the city council to appoint special counsel to protect interests of the municipality, particularly with reference to tideland deposits of oil and gas. The harbor commission has announced that no drilling permits connected with development work on tideland or upland will be issued pending adjustment of a restraining order now in effect. Drilling activity on municipally owned acreage is being frozen by legal obstacles that have been placed in the way by state officials and private citizens. The situation will not be alleviated for a fortnight, at least, because state officials have indicated their intention of instituting additional litigation as soon as action is taken on injunction proceedings in Superior Judge Wilson's court at Los Angeles early in February.

The injunction proceedings which have temporarily retarded development work were instituted by C. E. Dayton, and this action, which resulted in issuance of a temporary injunction, halted drilling operations on four wells located on a city-owned tract under a contract by which the municipality receives 50 per cent royalty. State officials have already announced plans to file an action against the city of Long Beach under which a claim to mineral rights of all tidelands will be made In the communication to the city council requesting

*(Continued on Page 74)*

# ADDING to your with REED TOOL JOINTS



Extra profits above those usually obtained is the goal of every operator. These extra profits gained from wise and economical application of his equipment mean extra dividends to him. The operator who is interested in MORE HOLE PER BIT, MORE WELLS PER STRING OF TOOL JOINTS cannot afford to miss ADDING TO HIS PROFITS by "Going Reed".

**REED PIONEERED:—**

**THE FULL HOLE TOOL JOINT**
**IN 1926**

**ADOPTED A. P. I. STANDARD**
**IN 1934**

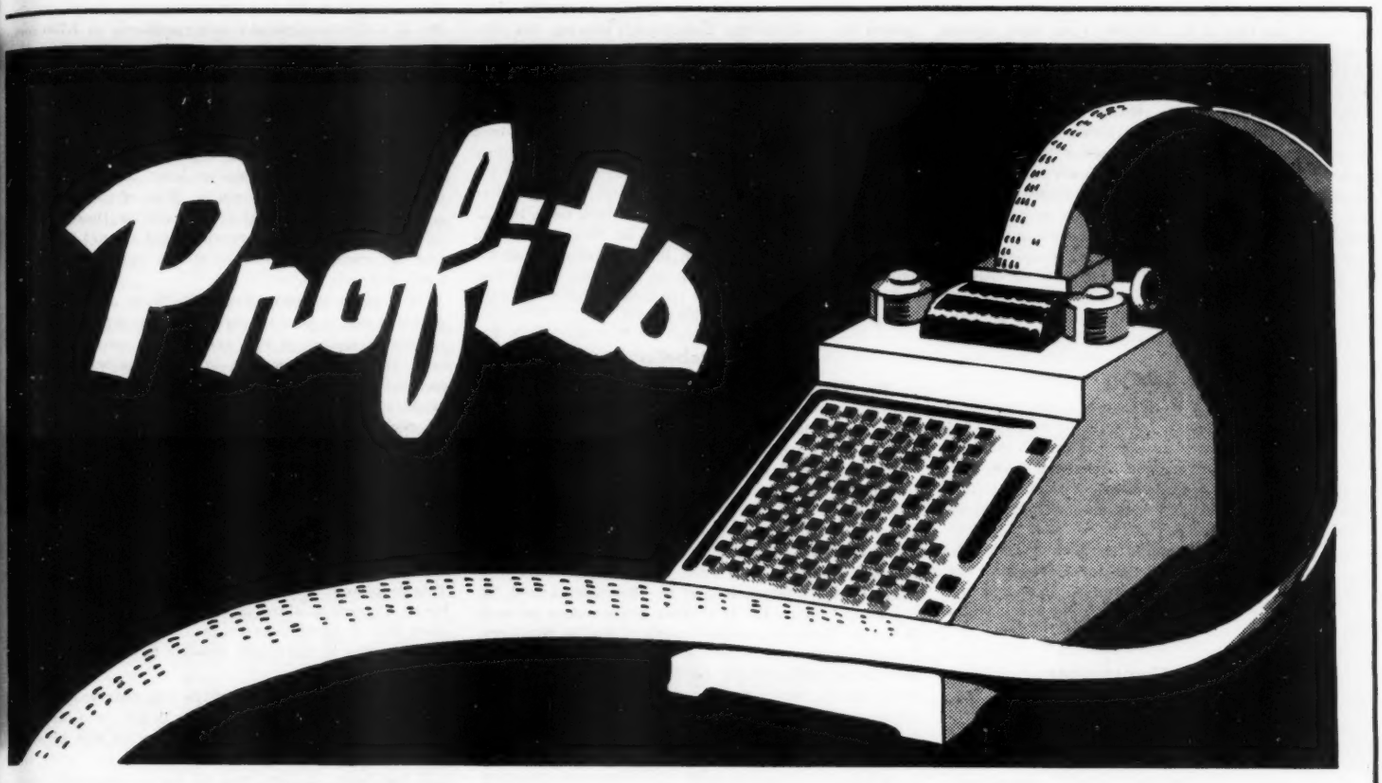
**REED PIONEERED:—**

**THE INTERNAL FLUSH TOOL JOINT**
**IN 1936**

**SUGGESTED A. P. I. STANDARD**
**IN 1937**

## REED ROLLER

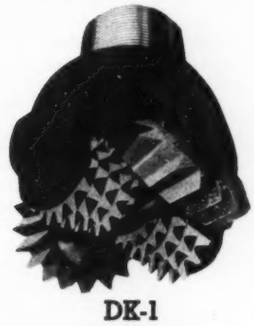
HOUSTON,




# with REED DK ROCK BITS

Ball-thrust bearings (in addition to the main load bearings) which provide more bearing under the cutters and hold them in true frictionless alignment are only one of the FEATURES of REED BITS that, combined with improved metallurgy in the bit cutters, hard surfacing of the cutter teeth, and years of extensive and continuous research give you a better bit. Remember, next time, run a REED DK BIT (there is one for every formation).

BECAUSE
- YOU LOWER THE COST PER FOOT ON YOUR WELL
- YOU GET MORE HOLE PER BIT
- YOU DIG A FASTER—STRAIGHTER HOLE
- YOU MAKE FASTER HOLE WITH LESS WEIGHT WHICH MEANS MORE PROTECTION TO YOUR DRILL STEM AND TOOL JOINTS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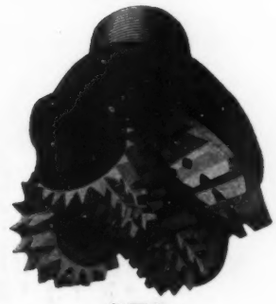
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# BIT COMPANY
TEXAS

appointment of special counsel, the harbor commission called attention to the fact that competent authority has estimated the value of oil and gas beneath harbor land claimed by the city as $25,000,000. Four legal actions have been filed challenging the city's ownership of mineral rights beneath the surface, and a fifth is scheduled by the state of California within 10 days. The proposed action of state officials is viewed with considerable anxiety by title companies and owners of fee acreage as the state will claim title to the original high tide line which extended back approximately 3,000 feet from the present tide line. This is of particular interest because some of the acreage involved was reclaimed as a result of dredging operations in both the harbor and in the Cerritos ship channel. Because this projected action may seriously impair title to considerable acreage in the southern part of the Wilmington field, operators are desirous of affecting a compromise between the city council of Long Beach and state officials.

## Ten Section

Shell Oil Co. No. 32-A Kern County Land, in section 29-30-26, Ten Section field, was completed flowing 3,046 bbls. of clean 33.9-gravity oil per day from 8,135 feet, after the hole had been plugged back from 8,301 feet. It is flowing through two 1-inch beans under a tubing pressure of 190 pounds and a casing pressure of 200 pounds. Shell's completion last week was No. 27-B Kern County Land, and it was brought in flowing 2,385 bbls. of clean 32.3-gravity oil and 1,855,000 feet of natural gas per day from 8,200 feet. This outpost extended the productive limits of the Ten Section field one location to the southwest.

## Wilmington Completions

Nine new wells were completed in the Wilmington field of Los Angeles Basin, and with the completion of three new wells in the harbor section of the field the aggregate initial daily production showed a substantial increase. Superior Oil Co. No. 1,960-1 Community flowed 4,680 bbls. of clean 25.3-gravity oil daily from 3,890 feet after the hole had been plugged back from 4,020 feet. It flowed from the Ranger and Terminal zones. From the Ranger zone the well flowed 260 bbls. of 16.2-gravity oil through the casing and outside the tubing, and from the Terminal zone it flowed 4,420 bbls. of clean 25.3-gravity oil through a 54/64-inch bean on the tubing.

General Petroleum Corp., on the Harbor Community lease in the southeastern end of the field, completed No. 1 flowing 1,860 bbls. of clean 24.8-gravity oil per day through a 34/64-inch bean from 3,939 feet and the No. 6 flowing 2,071 bbls. of 25.8-gravity oil initially through a 44/64-inch bean from 3,890 feet after the hole had been plugged back from 4,049 feet. No. 1 is producing from the Terminal zone exclusively although subsequent to completion the Terminal was closed in and the production test of the Ranger zone indicated a potentiality of 850 bbls. per day.

Union Pacific Railroad Co. completed No. 80 Offset, flowing 396 bbls. of clean 20.1-gravity oil after the hole had been plugged back from 3,446 feet to 3,125 feet.

Guz Pongratz, operating for Brookline Oil Co., completed No. 1 Ashbridge Community, flowing 848 bbls. of clean 16.7-gravity oil from the Terminal zone at 3,666 feet, and No. 1 Gilmore, flowing 460 bbls. of clean 17.2-gravity oil initially from 3,674 feet. No. 1 Ashbridge is in the extreme northwestern end of the field and the large production flowing through a 24/64-inch bean was somewhat surprising. Selegna Drilling & Production Co. completed No. 14 Wilmington, pumping 138 bbls. of clean 16.5-gravity oil daily from 3,658 feet after finishing the hole with 438 feet of 6⅝-inch liner, including 378 feet of 80 mesh landed at 3,581 feet. Black Gold Oil Corp. No. 5 registered an initial production of 335 bbls. of 20.1-gravity oil daily from 3,530 feet, and Wilton Oil Co. No. 3-W was good for 140 bbls. of relatively clean 17.8-gravity oil daily from 3,630 feet.

## Montebello

The Texas Co. completed an excellent well in the eastern end of the Montebello field of Los Angeles Basin when No. 18 Baldwin was brought in flowing 1,656 bbls. of relatively clean 39.8-gravity oil and 2,450,000 feet of natural gas per day through a 57/64-inch bean under a tubing pressure of 120 pounds and a casing pressure of 150 pounds. The A. S. Jonston Drilling Corp. has completed a new rig for a well to be drilled on property leased from the Pico County Water District and drilling equipment should be rigged up within another few days. In the western end of the Montebello field, St. Helens Petroleum Co. is making preparations to spud in No. 24 Monterey, located south of No. 20 Monterey, a recent completion which proved up the existence of substantial production in the upper part of the Miocene. Union Oil Co., which has acquired practically all of the acreage which had not been leased before completion of No. 20 Monterey, has staked location for its first well due south of No. 24 Monterey of St. Helens Petroleum Co. and spud is expected soon. The deep zone discovery well is holding up in excellent shape as current production is 710 bbls. of exceptionally clean 40.2-gravity oil and 5,005,000 feet of natural gas per day through a 32/64-inch bean. The well is still capable of producing at least 1,500 bbls. per day.

## Dominguez

Two new wells and one recompletion were put on production in the Dominguez field and both proved satisfactory. Selbar Oil Co., headed by C. E. Olmstead and Fred Barker, have recompleted No. 1 Richfield United, pumping 296 bbls. of clean 28.9-gravity oil per day after redrilling the hole to 4,905 feet. This well, acquired a few months ago from R. M. Harris on an overriding royalty basis, proved very satisfactory because the edgewater present at this point was excluded by an effective cement job on the 5¾-inch water string landed at 4,340 feet. As a result a second well will be drilled on the same property. Tide Water Associated Oil Co. completed No. 15 De Francis, pumping 384 bbls. of clean 29.7-gravity oil per day from 4,365 feet after the hole had been finished with 451 feet of 6⅝-inch liner, including 396 feet of perforated. Union Oil Co. No. 57 Callender proved a small producer at 7,790 feet, starting at 150 bbls. per day of 25.6-gravity oil on the beam from the Eighth Callender zone.

## Long Beach-Torrance

Deep zone development in the Torrance field of Los Angeles Basin is spreading rapidly and if the present rate of increase continues, at least 50 wells will be under way within a few weeks. Most of the work now consists of redrilling jobs, as many of these former upper zone producers were completed around 3,750 feet and can easily be deepened to the new zone around 4,800 feet.

J. J. Doyle is starting two new wells and it appears probable that at least 10 more will be spudded in shortly, as this formation is soft and drilling costs relatively low. There are at present 16 former upper zone producers headed down to the pay and about 20 more being prepared for early work. Chanslor-Canfield Midway Oil Co. recompleted No. 33 Torrance pumping 119 bbls. of clean 27.2-gravity oil per day from 4,925 feet. This well, which is only producing from the upper part of the lower zone, began flowing 135 bbls. per day shortly after completion and is at present flowing through a 3/64-inch bean. Previous to completion a string of 6⅝-inch casing had been cemented at 4,837 feet and production is coming from perforations at 4,760-4,808 feet. This deep zone is not highly prolific, as it is only good for an average of about 200 bbls. per day per well, but since this is more than the settled production in the upper zone it is financially possible to deepen old wells with good results.

In the area found productive last year west of the Los Cerritos section of the Long Beach field, Hilldon Oil Co. completed No. 3 Amebco, flowing 640 bbls. of clean 23.9-gravity oil per day from 4,238 feet after the hole had been finished with 60 feet of 4¾-inch liner, including 58 feet of perforated landed at 4,237 feet. Hilldon Oil Co. has a rig up for No. 1-A Bixby and is putting the finishing touches on another for No. 2 Flood Control. On the Oil Operators lease, Union Oil Co. is making preparations to drill No. 4 into production. It is bottomed at 4,015 feet and has an 8⅝-inch water string cemented at 4,005 feet.

In the El Segundo field of Los Angeles Basin, Richfield Oil Corp. completed No. 7 Republic, pumping 100 bbls. of clean 21.6-gravity oil per day from 7,408 feet.

In the vicinity of Jefferson Street and Centinella Avenue, Los Angeles, Petroleum Transportation Co. completed another shallow well pumping 25 bbls. of 70-octane gasoline from a depth of 37 feet. This oil, which has a slight green tinge, is being sold for $2.10 per barrel, and the several wells so far drilled have been put down with small equipment in about five hours. A similar grade gasoline was produced in like manner in the Wilmington field before completion of General Petroleum Corp. No. 1 Terminal. Approximately 400 bbls. of

**STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.**
**Crude oil prices at the well effective June 22, 1936**

| Gravity— | Signal Hill (Long Beach) | Seal Beach | Alamitos Heights | Huntington Beach | Inglewood | Playa del Rey | Olinda-Brea Canyon | Athens-Rosecrans | Dominguez | Elwood Terrace | Torrance | Richfield | Whittier El Coyote (La Habra) | Montebello | W. Coyote Hills | Santa Fe Springs | Mountain View | Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area | Lost Hills | Coalinga | Wheeler Ridge | Kettleman Hills | Santa Paula* | Ventura* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14-14.9 | $ .80 | $ .79 | $ .74 | $ .78 | $ .79 | $ .80 | $ .76 | .... | .... | .... | $ .80 | $ .76 | $ .76 | $ .77 | $ .78 | .... | .... | $ .70 | $ .70 | $ .70 | .... | .... | $ .70 | |
| 15-15.9 | .80 | .79 | .74 | .78 | .79 | .80 | .76 | .... | .... | .... | .80 | .76 | .76 | .77 | .78 | .... | .... | .70 | .70 | .70 | .... | .... | .70 | |
| 16-16.9 | .80 | .79 | .74 | .78 | .79 | .80 | .76 | .... | .... | .... | .80 | .76 | .76 | .77 | .78 | .... | .... | .70 | .70 | .70 | .... | .... | .70 | $ .70 |
| 17-17.9 | .80 | .79 | .74 | .78 | .81 | .80 | .76 | .... | .... | .... | .80 | .76 | .76 | .77 | .78 | .... | .... | .70 | .70 | .70 | .... | .... | .71 | .70 |
| 18-18.9 | .80 | .79 | .74 | .78 | .84 | .80 | .78 | .... | .... | .... | .82 | .76 | .76 | .77 | .78 | .... | .... | .70 | .70 | .70 | .... | .... | .73 | .73 |
| 19-19.9 | .82 | .79 | .74 | .82 | .87 | .84 | .81 | .... | .... | .... | .85 | .76 | .75 | .77 | .78 | .... | $ .70 | .74 | .74 | .71 | $ .70 | .... | .75 | .74 |
| 20-20.9 | .85 | .79 | .74 | .85 | .90 | .88 | .84 | .... | .... | .... | .88 | .78 | .82 | .77 | .80 | .... | .70 | .78 | .78 | .72 | .70 | .... | .77 | .77 |
| 21-21.9 | .88 | .79 | .74 | .89 | .93 | .93 | .88 | .... | .... | .... | .91 | .80 | .85 | .77 | .84 | $ .78 | .73 | .82 | .82 | .74 | .70 | .... | .79 | .80 |
| 22-22.9 | .92 | .82 | .74 | .92 | .96 | .98 | .92 | .... | .... | .... | .93 | .84 | .89 | .79 | .88 | .78 | .77 | .87 | .86 | .78 | .72 | .... | .82 | .83 |
| 23-23.9 | .95 | .86 | .77 | .96 | .99 | 1.02 | .96 | $ .84 | $ .79 | .... | .96 | .88 | .93 | .82 | .92 | .78 | .80 | .92 | .90 | .82 | .76 | .... | .85 | .86 |
| 24-24.9 | .99 | .91 | .80 | 1.00 | 1.02 | 1.06 | .99 | .88 | .81 | .... | .99 | .91 | .96 | .85 | .96 | .82 | .84 | .97 | .94 | .86 | .79 | .... | .87 | .89 |
| 25-25.9 | 1.03 | .95 | .82 | 1.03 | 1.05 | 1.11 | 1.03 | .93 | .83 | .... | 1.02 | .95 | .... | .89 | .99 | .86 | .88 | 1.01 | .98 | .90 | .83 | .... | .90 | .91 |
| 26-26.9 | 1.06 | 1.00 | .85 | 1.07 | 1.09 | 1 16 | 1.06 | .98 | .86 | .... | 1.05 | .98 | .... | .92 | 1.03 | .90 | .91 | 1.06 | 1.02 | .... | .... | .... | .92 | .92 |
| 27-27.9 | 1.10 | 1.05 | .88 | 1.11 | 1.12 | .... | 1.10 | 1.03 | .88 | .... | .... | 1.02 | .... | .96 | 1.06 | .95 | .93 | 1.10 | 1.06 | .... | .... | .... | .95 | |
| 28-28.9 | 1.14 | 1.10 | .90 | 1.14 | 1.15 | .... | 1.14 | 1.07 | .90 | .... | .... | 1.06 | .... | .99 | 1.10 | .99 | .99 | 1.15 | 1.10 | .... | .... | .... | .97 | |
| 29-29.9 | 1.17 | 1.15 | .93 | 1.18 | 1.18 | F.O.B. | 1.17 | 1.12 | .93 | .... | .... | 1.09 | .... | 1.03 | 1.14 | 1.03 | 1 02 | 1.20 | 1 14 | .... | .... | .... | .99 | |
| 30-30.9 | 1.21 | 1.19 | .95 | 1.22 | 1.21 | our | 1.21 | 1.17 | .95 | F.O.B. | .... | .... | .... | 1.07 | 1.17 | 1.08 | 1.06 | 1.25 | 1.18 | .... | .... | .... | 1 01 | |
| 31-31.9 | .... | .... | .... | .... | 1.24 | Pipe | 1.24 | 1.22 | .97 | Ship | .... | .... | .... | 1.11 | 1.21 | 1.12 | 1.09 | 1.29 | .... | .... | .... | .... | .... | |
| 32-32.9 | .... | .... | .... | .... | 1.27 | Line | 1.27 | 1.27 | 1.00 | .... | .... | .... | .... | 1.14 | 1.25 | 1.16 | 1.13 | 1.34 | .... | .... | .... | .... | .... | |
| 33-33.9 | .... | .... | .... | .... | .... | .... | .... | 1.32 | .... | $1.28 | .... | .... | .... | 1.18 | 1.28 | 1.20 | 1.17 | 1.38 | .... | .... | .... | $1 19 | .... | |
| 34-34.9 | .... | .... | .... | .... | .... | .... | .... | 1.37 | .... | 1.32 | .... | .... | .... | 1.22 | 1.32 | 1.25 | 1.20 | .... | .... | .... | .... | 1 23 | .... | |
| 35-35.9 | .... | .... | .... | .... | .... | .... | .... | 1.42 | .... | 1.35 | .... | .... | .... | 1.25 | .... | 1.29 | .... | .... | .... | .... | .... | 1 27 | .... | |
| 36-36.9 | .... | .... | .... | .... | .... | .... | .... | 1.46 | .... | 1 39 | .... | .... | .... | 1.29 | .... | 1.33 | .... | .... | .... | .... | .... | 1 31 | .... | |
| 37-37.9 | .... | .... | .... | .... | .... | .... | .... | 1.51 | .... | 1.43 | .... | .... | .... | 1.32 | .... | 1.37 | .... | .... | .... | .... | .... | 1 35 | .... | |
| 38-38.9 | .... | .... | .... | .... | .... | .... | .... | 1.56 | .... | .... | .... | .... | .... | 1.36 | .... | 1.42 | .... | .... | .... | .... | .... | 1 39 | .... | |
| 39-39.9 | .... | .... | .... | .... | .... | .... | .... | 1.61 | .... | .... | .... | .... | .... | 1.40 | .... | .... | .... | .... | .... | .... | .... | 1 43 | .... | |
| 40-40.9 | .... | .... | .... | .... | .... | .... | .... | 1.66 | .... | .... | .... | .... | .... | 1.43 | .... | .... | .... | .... | .... | .... | .... | .... | .... | |

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

this high-grade oil has been produced in the vicinity of Jefferson and Centinella streets up to the present and preparations are under way to drill additional holes.

### Round Mountain

In the Pyramid Hills section of the Round Mountain field, Kern County, Eastmont Oil Co. completed No. 5 Olcese in section 16-28-29, pumping 252 bbls. of clean 17.4-gravity oil per day from 1,755 feet. Shell Oil Co. No. 2 Olcese-Lilly, in section 21-28-29, also in the Pyramid Hills section, pumped 154 bbls. of clean 23.4-gravity oil per day from a depth of 1,597 feet, plugged back from 1,835 feet. In the northern end of the field, D. G. Vedder completed No. 5 Bell in section 12-28-28, pumping 379 bbls. of relatively clean 14.5-gravity oil per day from 1,853 feet.

### Midway-Sunset

In the Midway-Sunset field of Kern County, Otis Hoyt No. 8, in section 7-11-23, was finished pumping 81 bbls. of 14.3-gravity oil per day from 1,588 feet after the hole had been completed with 265 feet of 4¾-inch liner, including 264 feet of perforated. Pattiway Oil Co. No. 4, in section 12-11-24, was completed pumping 44 bbls. of 13.5-gravity oil initially from 1,662 feet after the hole had been finished with 355 feet of 6⅝-inch liner, including 302 feet of perforated landed at 1,568 feet.

Out on the West Front section of the Kern River field, Kern River Oilfields, an affiliate of St. Helens Petroleum Co., completed No. 25-4-B in section 25-28-27, pumping 88 bbls. of 14.5-gravity oil daily from 2,043 feet, plugged back from 2,074 feet. The company has completed a rig for No. 25-1-C in the same section and will proceed with drilling operations in the immediate future.

In the Kettleman North Dome field, Kenda completed No. 83-4-P in section 4-22-17, flowing 3,597 bbls. of clean 33.5-gravity oil daily from 8,500 feet along with 2,500,000 feet of natural gas. In the Fruitvale field, Western Gulf Oil Co. completed No. 31-B in section 14-29-27, flowing 276 bbls. of 17.3-gravity oil per day from 3,013 feet.

### Coastal Basin

In the Santa Maria Valley field are at least 10 potential producers either on top of the pay or rotating ahead in the oil sand. The latest completion is Ohio Oil Co. No. 4 Moretti, in section 21-10-34, which pumped 295 bbls. of clean 17.1-gravity oil daily from 4,259 feet after the hole had been finished with 316 feet of 6⅝-inch liner, including 273 feet of perforated landed at 4,257 feet.

In the Hopper Canyon area, Commander Oil Co. recompleted No. 6-F in section 13-4-9, pumping 70 bbls. of 25.1-gravity oil per day after cleaning out the hole to bottom, 2,027 feet, but the excessive water cut may necessitate additional work. In the Ventura Avenue field, General Petroleum Corp. No. 13 Notten tested wet on a production test at 9,871 feet and the crew is cleaning out the hole preparatory to running a water witch.

## Sliverville Sand in Bradford Field Elusive and Streaky

BRADFORD, Pa., Jan. 31.—The Sliverville sand, in the Bradford field in which there are three wells that started at the rate of 1,000 bbls. of oil per day each, and one good gas well, is proving narrow and streaky. The Niagara Oil Co. (Forest Oil Corp. interests) drilled two oil wells and the Minard Run Oil Co. (Emery interests) completed one, but since the pool was opened a number of other wells have been drilled which either missed the sand altogether, or found it productive of little oil or gas.

The Niagara Oil Corp. is now drilling a test offsetting Minard Run Oil Co. No. 1, a gas well. Barry & Wingard failed to get more than a showing in the Sliverville sand a mile and a half west of the discovery oil well, but will drill another test a half mile north of their first test in the hope of finding the pay. Healy Petroleum Corp. will drill its third test 4,000 feet west of its second well. That company's first test was good for not more than 2 bbls. of oil and 20,000 feet of gas and the second is estimated as a 3- to 5-bbl. well with 50,000 feet of gas. Minard Run Oil Co. first and third Sliverville tests were completed in the Lewis Run sand, one a 50,000-foot gas well and the other good for 2 to 3 bbls. of oil per day.

The big gasser above mentioned was drilled by Williams & Becker west of all the other tests, and is estimated good for 7,000,000 feet per day. It is shut in.

## Gulf Coast Fields

*(Continued from Page 60)*

choke. Humble Oil & Refining Co. No. 1 Tomball Townsite, 5,593 feet, 315 bbls., quarter-inch choke.

### Jefferson County

Ameila field: Humble Oil & Refining Co. No. 2-C Pinchback, 6,778 feet, 392 bbls., quarter-inch choke. Nome field: Shell Petroleum Corp. No. 6 Carpenter, 6,040 feet, 508 bbls., quarter-inch choke.

## Map Copyrighted

The base map used in preparing The Oil and Gas Journal's Reserve Map printed on pages 40 and 41 in the January 27 issue was secured from Rand-McNally, Chicago, and is copyrighted by that company.

## Chemistry and Physics Handbook

Workers in every department of the oil industry have occasion at one time or another to refer to data on physics and chemistry in solving problems. For quick reference the "Handbook of Chemistry and Physics," 22d edition, has been published under the guidance of Charles D. Hodgman, M. S., associate professor of physics, Case School of Applied Science, Cleveland, Ohio. This edition contains more than 150 pages of new composition, making the total 2,069 pages.

"Handbook of Chemistry and Physics" may be purchased through the Book Department of The Oil and Gas Journal at the regular retail price of $6.00, express prepaid, postage extra outside the United States. A copy will be forwarded promptly upon receipt of check or money order. Where no payment accompanies the order the book will be sent express c.o.d. to avoid delay.


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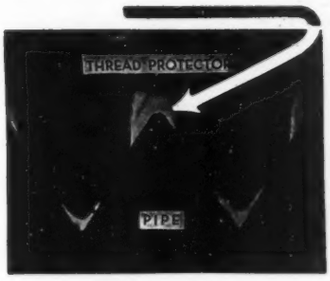


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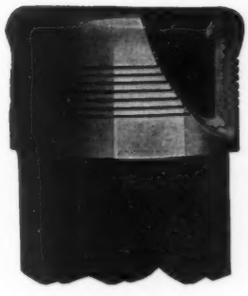

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# Kansas Developments

By
DAL DALRYMPLE

# Exploratory Campaign Gains Momentum, Many New Tests

The search for new oil reserves in Kansas in 1938 is gaining momentum after the temporary lull of the year-end, with prospects that exploratory activity this year may equal and possibly surpass the wildcat campaign of 1937, when new records for discoveries were made. There has been widespread leasing activity throughout western Kansas, extending to the Colorado line, with geologic and seismograph exploration keeping pace. As a result many new wildcats have been started or proposed, several being announced the past week.

Work has started at a wildcat in Finney County at Atlantic Refining Co. No. 1 Nunn, SE NE section 27-21-34w, southwest of the Shallow Water pool in Scott County.

In Gove County, Central States Oil Co. No. 1 well is a wildcat location in section 36-13-26w, 20 miles southeast of Gove, the county seat, and near the Trego County line.

P. G. Reynolds No. 1 Watkins, C SW section 32-28-28w, is a rig. This wildcat is in southern Gray County, 2 miles from the town of Montezuma.

Location has been announced for a Graham County wildcat at Continental Oil Co. and Cities Service Oil Co. No. 1 Trexler, CEL W half NE section 15-9-12w, an Arbuckle lime test.

Near Minneapolis in Ottawa County, C. E. Babcock and others were moving in material at No. 1 Copeman, wildcat in C NW NE section 18-10-2w.

Cities Service Oil Co. and Atlantic Refining Co. No. 1 Delaney, CSL NE section 13-26-12w, is a wildcat location in Pratt County, 8 miles northeast of the one-well Iuka pool.

In Trego County, Central States Oil Co. No. 1 Kinzel, SW cor. section 9-13-22w, was shut down after spudding. Martin & Manning No. 1 Lynd, NW SW section 16-11-21w, wildcat 13 miles northeast of Wakeeney, was moving in material.

Several outposts were reported in Stafford County. Clyde Knight and associates had started work at No. 1 McNickle, SE NE section 2-24-11w, 4 miles north of the Zenith pool. C. L. Carlock No. 1 Gates, SE SW NE section 34-22-11w, east of the Richardson pool, was building derrick. Torrey & Feaster No. 1 Mueller, SE cor. section 29-21-12w, 1 mile northwest of a recent Arbuckle lime strike, had started drilling. National Refining Co. was erecting derrick at No. 1 Bonham, SW SW SE section 28-25-12w, wildcat south of Stafford. Stanolind Oil & Gas Co. No. 1 Hill, NE NE SW section 2-23-12w, 1½ miles southwest of the Richardson pool, was a location.

In Barton County, Shell Petroleum Corp. No. 1 Hupfer, C S half SE section 3-16-14w, 1 mile west of the Trapp pool, was a location.

Carter Oil Co. and L. H. Wentz No. 1 Lytle, C NE NW section 6-32-14w, southwest of the Lake City pool in Barber County, had started drilling.

Gerald Smith and others No. 1 Wilson, SE SW NW section 9-33-6e, wildcat west of the Dexter gas area of Cowley County, was a location. Earl Wakefield No. 1 White, NW NW NE section 4-33-4e, 3 miles west of the Winfield pool, had started work.

Sam Schneider and others No. 1 Massey, or Sterling College, SE SW SE section 28-20-8w, 5 miles southwest of Lyons in Rice County, had begun operations.

Lauck & Monerief No. 1 Foster, SE SE NW section 33-11-16w, in Ellis County, 5 miles west of the Fairport pool, was a location.

J. J. Muth No. 1 Conley, C SE section 4-10-35w, farthest northwest wildcat in the state, had rigged up and was due to spud. It is in Thomas County, 15 miles southwest of Colby.

Daily allowable production for February was set at 176,400 bbls. of oil by the Corporation Commission. This was the Bureau of Mines estimate of market demand, and is 10,072 bbls. under the January allowable.

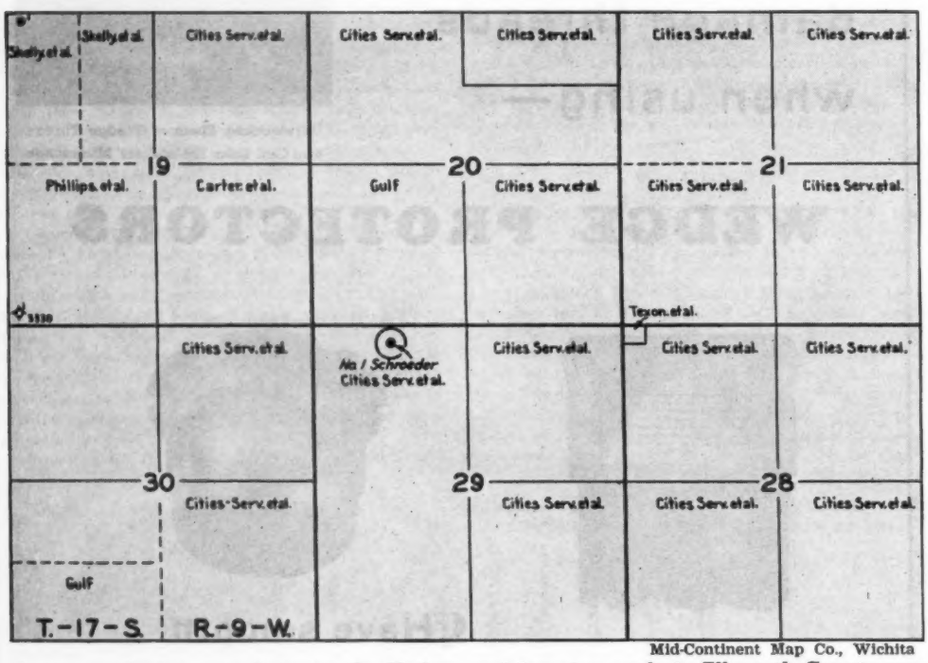
Thayer Drilling Co. and James A. Brouk No. 1 Soderstrom, SE SE NW section 21-17-13w, pool opener in the Hoisington area, Barton County, was completed for potential of 1,065 bbls. of oil at 3,268 feet, total depth. It topped anhydrite at 894 feet, Kansas City lime 3,210 feet, first pay 3,222-27 feet, increase in oil at 3,257-63 feet. It was acidized and pumped 255 bbls. of oil the first four hours.

Glimac Oil Co. and others No. 1 Richards, SE SW NW section 5-11-18w, northwest of the Haller area in Ellis County, found Topeka lime at 3,019 feet, Kansas City lime 3,300 feet, was bottomed at 3,373 feet, and pumped 160 bbls. of oil in the first four hours, making potential of 941 bbls. of 36.8-gravity oil.

Joe Aylward No. 1 Weihe, SW SW NE section 23-18-9w, Rice County wildcat, found Arbuckle lime at 3,335 feet, total depth 3,367 feet, had a hole full of water and was abandoned.

Western Kansas Oil & Refining Co. No. 1 Bailey, SW SW NW section 19-20-6w, an old Rice County wildcat, was drilled in new hole to Arbuckle lime at 3,816-75 feet, total depth, water intruded and it was abandoned. Total depth in old hole was 1,032 feet.

Reeves & Kinnan No. 1 Heim, SW cor. section 5-29-3w, wildcat in Sedgwick County, topped Arbuckle lime at 4,317 feet, total depth 4,330 feet, sulfur water intruded and it was abandoned.




Mid-Continent Map Co., Wichita

*A new producing area between the Heiken and Lorraine pools in Ellsworth County was opened in section 29-17-9w*

## Russell County

Carter Oil Co. No. 2 Detrich, C S half S half SW section 8-15-13w, an old well in Russell County, was deepened from 2,862 feet to Arbuckle lime at 3,074 feet, total depth 3,180 feet, made potential of 2,057 bbls. of oil and was recompleted.

Largest of five new wells completed in the county was Phillips Petroleum Co. No. 5 Carroll, NE NE SE section 18-14-14w. It topped Kansas City lime at 3,035 feet, had pay at 3,065-71 feet, total depth 3,084 feet, and swabbed 111 bbls. of oil in eight hours naturally. It was acidized and pumped 339 bbls. of oil in four hours, making potential of 1,796 bbls.

Stearns & Streeter No. 7 Miller, SW NE NW section 31-14-13w, made potential of 1,745 bbls. of oil from Gorham sand at 3,109-12 feet, total depth, completed.

Transwestern Oil Co. No. 11 Helen Polcyn, NW NW SE section 10-14-15w, found Gorham sand at 3,256-59½ feet, total depth, and made potential of 610 bbls. of oil.

Cities Service Oil Co. No. 4 Krug D, NE SW SE section 24-15-14w, topped Arbuckle lime at 3,325 feet, was bottomed at 3,337 feet, acidized, pumped 298 bbls. of oil in four hours and made potential of 1,380 bbls.

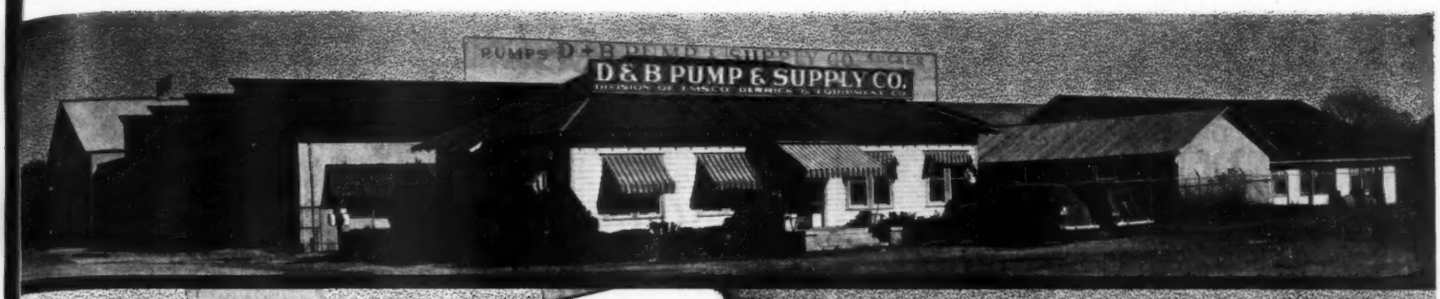
Shell Petroleum Corp. No. 2 Dumler, SE SE SW section 36-15-14w, was acidized and pumped 241 bbls. of oil in four hours, making potential of 959 bbls. Top of Arbuckle lime was 3,296 feet, total depth 3,321 feet.

New work in Russell County: A. H. Witt No. 2 Witt, NE NW SE section 3-14-15w, spudded; Central Petroleum Co. No. 6 Roubach A, NW NE NE section 15-14-15w, rig; same company's No. 1 Roubach B, NW NW SE section 15-14-15w, location; Carter Oil Co. No. 1 Detrich, SW cor. section 8-15-13w, old well, rigging up rotary to deepen; Transwestern Oil Co. No. 4 Boomhower, SW cor. section 19-15-13w, rig; Gulf Oil Corp. No. 11 Hoffman, SE SW SW section 31-15-13w, rig; same company's No. 7 Mollie, NW NW SE section 25-15-14w, rig.

## Barton County

Carter Oil Co. No. 1 Stueder, SE cor. section 10-17-11w, Kraft pool, Barton County, found Arbuckle lime at 3,325 feet, was bottomed at 3,335 feet, pumped 319 bbls. of oil in four hours and made potential of 1,807 bbls.

Same company's No. 2 Kroutwurst, SE SE NW section 10-17-11w, pumped 241 bbls. of oil in eight hours, was acidized and made potential of 881 bbls. of oil. It had Arbuckle lime at 3,300 feet, total depth 3,326 feet.

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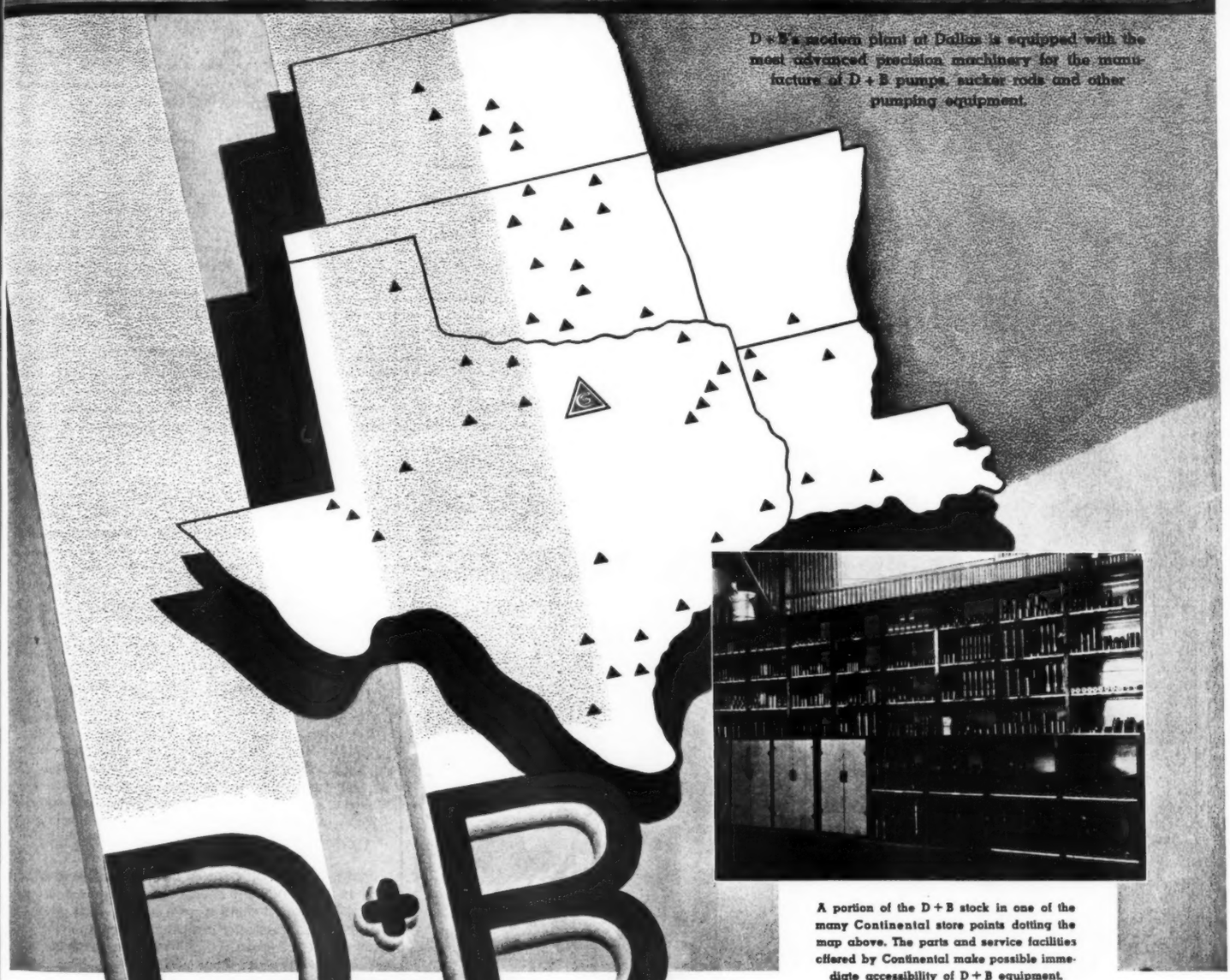



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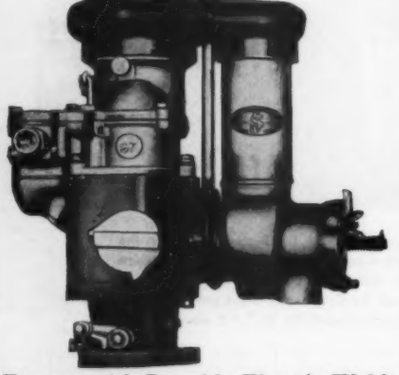

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Continental Oil Co. No. 1 Rathburn, NE NE SE section 9-17-13w, had Arbuckle lime at 3,359 feet, total depth 3,386 feet, and was dry and abandoned.

Darby Petroleum Corp. No. 1 Casey, SE SE NW section 4-16-12w, had a hole full of water at 3,396-3,400 feet, total depth, was dry of oil and abandoned.

Stanolind Oil & Gas Co. No. 7 Schartz, NW NW SW section 2-20-11w, Silica district, found Arbuckle lime at 3,288 feet, was bottomed at 3,299 feet, shot, acidized and made potential of 197 bbls. of oil.

Same company's No. 3 Dick, SW cor. section 2-20-11w, topped Arbuckle lime at 3,291 feet, total depth 3,304 feet, plugged back to 3,298 feet, and was dry and abandoned.

Stanolind Oil & Gas Co. No. 7 William Panning, NE cor. section 10-20-11w, had Arbuckle lime at 3,298 feet, was bottomed at 3,314 feet, plugged back to 3,304 feet, acidized and shot without results, and was dry and abandoned.

First reports of new activity in Barton County: Shell Petroleum Corp. No. 1 Hoffman C, NW NE SE section 1-16-14w, rig; I. W. Murfin and others No. 1 Rexroat, NW NW SE section 14-17-13w, location; Stanolind Oil & Gas Co. No. 3 Stuckmann, NE NE SE section 11-20-11w, rigging up rotary; Gulf Oil Corp. No. 1 Nichols, NW SW NW section 12-20-11w, set 10-inch casing at 174 feet, drilling; same company's No. 2 Nichols, SW SW NW section 12-20-11w, rig; Texas Co. No. 1 Loury, NE NW NW SW section 2-17-13w, drilling below 1,300 feet.

### Ellis County

Cities Service Oil Co. No. 2 Hall A, SE SW SW section 14-11-17w, Bemis pool, Ellis County, was completed for potential of 2,664 bbls. of oil from Arbuckle lime found at 3,380 feet, total depth 3,388 feet.

Republic Natural Gas Co. No. 6 Romine, SW NE NW section 18-11-16w, was an abandoned location.

### Ellsworth County

Skelly Oil Co. No. 2 Moran, NE SE SE section 31-17-10w, extended Ellsworth County sector of the Stumps pool one location northwestward. The pool straddles the Ellsworth-Rice County line. Kansas City lime was topped at 2,943 feet, pay 3,009 feet, total depth 3,018½ feet. It flowed 165 bbls. of oil in five hours naturally; was acidized, flowed 757 bbls. in four hours, down 1½ hours; then flowed 718 bbls. in four hours and made potential of 4,309 bbls.

### McPherson County

Continental Oil Co. and associates No. 7 Graber, SE NE NW section 32-21-1w, Graber pool, McPherson County, found Hunton lime at 3,286 feet, total depth 3,319 feet, was acidized and made potential of 569 bbls. of oil.

Same company's No. 10 Hetzke, SE SW NE section 29-21-1w, was a cellar. Marine and others No. 1 Suffield, SW NW SE section 25-19-2w, was moving in material.

### Reno County

Transwestern Oil Co. No. 2 Teten, SW SW NE section 12-23-4w, Burrton field, Reno County, found Chat at 3,254 feet, total depth 3,430 feet, and made potential of 1,651 bbls. of oil after acidizing and shooting.

Wilcox Oil & Gas Co. No. 3 Neufeldt A, SE SE NW section 12-23-4w, had Chat at 3,258 feet, total depth 3,428 feet, plugged back to 3,398 feet, shot and acidized, and made potential of 676 bbls. of oil.

New activity in Reno County: Clyde Pulse and others No. 1 Payne, C W half NW NE section 4-22-7w, old total depth 3,440 feet, running 5-inch casing; Transwestern Oil Co. No. 3 Teten, NW SW NE section 12-23-4w, rig; Cities Service Oil Co. No. 1 Krele, C NW section 27-23-10w, moving in material.

### Sedgwick County

The Goodrich pool, Sedgwick County, was extended one location northwestward at Prunty Production Co. No. 1 Lewis, SE SE NE section 17-25-1e, which pumped 232 bbls. of oil in four hours after acidizing and made potential of 1,394 bbls. of oil. Chat was topped at 3,005 feet, Misener dolomite 3,327 feet, total depth 3,328 feet.

National Refining Co. No. 2 fee, C NE SE section 36-27-2e, had dug cellar and pits.

### Stafford County

Stanolind Oil & Gas Co. and others No. 1 McComb, NE NE NW section 26-24-11w, extended the Zenith pool, Stafford County, one-half mile southward. It topped Kansas City lime at 3,390 feet, Misener sand 3,805 feet,

*(Continued on Page 84)*

# Oklahoma Operations

By
DAL DALRYMPLE

# Deep Pay Zones Goal of New Tests in Southern Oklahoma

Southern and southwestern Oklahoma areas continue to dominate field news of the state, with the Fox and Cement areas sharing the spotlight with several interesting wildcats, including one of the deeper tests being drilled in the United States.

The deepest test in the state is Gulf Oil Corp. No. 1 Thomas, SW NW NW section 14-4n-5w, wildcat north of the Knox area in Grady County. It was drilling below 10,125 feet with nothing showing. It still has to penetrate 1,105 feet deeper to equal the total depth of 11,230 feet in the discovery well in the Binger area, Caddo County.

Love County rejoined the list of active oil areas the past week when work was started at Sinclair Prairie Oil Co. No. 1 Felts, NE cor. section 35-6s-2w, about one-half mile east and slightly south of the company's small discovery well near Oswalt. Location was announced late last year, but work was delayed until completion of 1938 plans. It was to be a 7,000-foot test.

The deep Stephens County test drilled to 9,086 feet by Coline Oil Co. at No. 1 Johnson, SW SE NE section 1-2n-8w, set 4¾-inch casing at 8,997 feet and was preparing to test a 50-bbl. show of oil. It originally was drilled to a few inches below 10,000 feet, plugged back and drilled out to present depth. This test has been delayed by considerable mechanical trouble.

In the Milroy area, Carter Oil Co. No. 1 Carter-Harley, C NW NW section 19-2s-3w, Carter County, was drilling in Viola lime below 6,270 feet. It is an east offset to the 3,000-bbl. deep discovery well at Milroy, across the line in Stephens County.

Four new tests were getting started in the Fox field, Carter County, where two deep producers recently were completed. Wirt Franklin Petroleum Corp. No. 1 Williams, C NW SE section 27-2s-3w, east offset to the deep discovery at Fox, was moving in material. Gulf Oil Corp. No. 7 Lester, C NW NW section 35-2s-3w, had spudded. Same company's No. 2 McClure, C SE NE section 28-2s-3w, was digging cellar and building road, and the company's No. 8 Garrett, C NW SW section 27-2s-3w, was completing cellar.

Early announcement of other tests in the Milroy and Fox areas were anticipated.

Oklahoma daily allowable production for February was set at 535,000 bbls. of oil by the Corporation Commission, some 34,700 bbls. daily below the Bureau of Mines recommendation. January allowable was 550,000 bbls.

## Caddo County

The big well that centered attention on the Cement field in Caddo County was completed the past week. It was Ray Stephens, Inc., No. 2 Griffin, SE NE SE section 27-6-10w, on the northwest edge of the field and about 7 miles south of Anadarko. On open test it flowed 3,505 bbls. of 36-gravity oil, with 15,000,000 feet of gas, in 24 hours, producing from Deese formation. It had sand and shale at 4,328-46 feet, sand 4,346-62 feet, total depth 4,364 feet. Showings of oil were reported in sandy lime at 3,682 feet, in cores in sand at 4,023-28 feet and 4,069-74 feet, as well as at 4,346-62 feet.

Another well was completed on the east side of the field at Magnolia Petroleum Co. No. 7 Hedlund, SE NW NE section 11-5-9w. It had Wade sand in Deese formation at 3,812-67 feet, shale 3,867-72 feet, total depth, and flowed 175 bbls. of oil through 2-inch tubing in 24 hours, with 4,000,000 feet of gas.

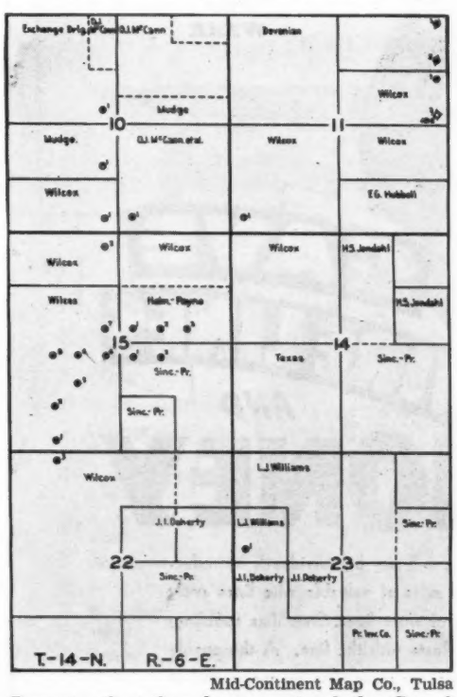
Magnolia Petroleum Co. No. 8 Hedlund, NE NW NE section 11-5-9w, was digging cellar and pits. Darby Petroleum Corp. No. 1 Loose, NE SE SE section 27-6-10w, was moving in material.

Ray Stephens, Inc., No. 1 Thompson, SW SE NW section 27-6-10w, extreme northwest edge of the field, was cleaning out after a difficult fishing job and was due to run casing. It had sand series at 5,232-5,468 feet. Same operator's No. 3 Griffin, SW NE SE section 27-6-10w, was shut down at 800 feet, replacing boilers. The operator's No. 2 Funk, SE SW SE section 1-5-9w, east side of the field, was waiting after setting pipe on top of sand series at 5,240 feet, total depth 5,267 feet. Magnolia Petroleum Co. No. 10 Niles, SW SW NW section 36-6-10w, was drilling below 3,610 feet in lime.

## Wildcat Completions

Helmerich & Payne No. 1 Scott, SE SE NE section 20-28-1w, wildcat in Kay County, had Arbuckle lime at 3,607 feet, total depth 3,716 feet, plugged back to 3,600 feet, water intruded and it was abandoned.

Ellison & Nix No. 1 Metropolitan, C NE NE section




Mid-Continent Map Co., Tulsa

*Recent oil strikes have revived the Sac & Fox pool in Township 14-6e, Lincoln County, with several tests now drilling*

14-7-9, Hughes County wildcat, had Cromwell sand at 4,085 feet and was dry and abandoned at 4,136 feet, total depth.

Tow Walker No. 1 Bowman, SW SW NW section 10-4s-17w, Tillman County wildcat, was abandoned at 200 feet. Cavens and others No. 1 Southerland, SW SW NW section 35-4s-16w, Tillman County wildcat that had spudded to 44 feet, was abandoned and was expected to be drilled later at new location.

## Pontotoc County

Superior Oil Co. and Crusaders Petroleum, Inc., No. 1 Brydia, SE SW SE section 24-2n-6, Fitts field, Pontotoc County, found Hunton lime at 3,815 feet, total depth 3,834 feet, was acidized and completed for estimated potential of 1,150 bbls. of oil.

Clark & Cowden No. 1 Mayhue, SW NE SE section 20-2n-6, topped Cromwell sand at 3,195 feet, pay 3,286 feet, total depth 3,293 feet, swabbed 112 bbls. of oil in 24 hours and was completed for an estimated 60 bbls. of oil daily.

E. H. Moore No. 2 Ingram, SW NE NE section 22-2n-7, an old well, was deepened from 3,898 feet to 3,946 feet in Hunton lime, and pumped 26 bbls. of oil and 101 bbls. of water daily, recompleted.

Continental Oil Co. No. 1 Smith, NW SW SW section 2-1n-7, Jesse area, had Hunton lime at 3,994 feet, Sylvan shale 4,130 feet, total depth 4,131 feet, plugged back and was completed as a disposal well.

Sinclair Prairie Oil Co. No. 1 Thompson, C E half SW NW section 1-1n-7, had dug cellar and pits. E. H. Moore No. 3-A Mack, NW SW SE section 28-2n-7, had dug cellar and pits.

## Seminole County

Atlantic Refining Co. No. 2 Damron, NW NE NW section 22-6-6, Traugh area, Seminole County, found Dolomite at 3,593 feet, was bottomed at 3,662 feet, and flowed 429 bbls. of 40-gravity oil through casing in four hours.

Sinclair Prairie Oil Co. No. 1 Tennison, SE SE NW section 22-6-6, had sand at 2,310 feet, total depth 2,360 feet, and produced 8,100,000 feet of gas, completed.

Bryon Petroleum Co. No. 1 Geahouse, SW NE SE section 4-7-6, had sand at 2,824-45 feet, total depth 2,853 feet, was shot, swabbed 186 bbls. of accumulated oil in 22 hours, and was completed, swabbing 100 bbls. of 37-gravity oil daily.

J. F. Smith and Commercial Drilling Co. No. 1 Sparks, NE NW SE section 32-7-6, Dora pool, topped sand at 2,884 feet, total depth 2,937 feet, was shot and flowed 660 bbls. of oil in 24 hours through casing.

J. F. Smith No. 2 Huddleston, NE NE NW section 32-7-6, an old well, was deepened from 2,936 feet to 2,940 feet, total depth, cleaned out and increased production from 20 bbls. to 80 bbls. of oil daily.

Amerada Petroleum Corp. and others No. 3 Tilghman, SE NE NW section 2-10-5, North Earlsboro pool, swabbed 378 bbls. of oil in 13 hours and was completed for an allowable of 100 bbls. of oil daily. Top of Dolomite was 4,618 feet, Wilcox sand 4,644 feet, total depth 4,653 feet.

New work in Seminole County: Foster Development Co. No. 1 Chornick, NW NW SW section 4-6-6, cellar and pits; Rogers & Rogers No. 1 Roberts, NE SE SE section 6-6-8, drilling at 2,805 feet; Carter Oil Co. No. 6 Riddle, C N half SE SE section 35-11-6, an old well, was deepened from 4,050 feet to 4,067 feet and had 1,065 feet of oil in the hole.

## Noble County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 2 Henn, SW SE NE section 32-20-2w, in the south sector of the Lucien pool but in Noble County, had first Wilcox sand at 5,007-48 feet, second sand 5,112 feet, total depth 5,143 feet, and flowed 194 bbls. of oil in 24 hours, and was completed as a minimum well for 75 bbls. of oil daily.

Ray Stephens, Inc., No. 1 Henn, SE SW NE section 32-20-2w, had rigged up and was due to spud. Sinclair Prairie Oil Co. No. 1 Guthrie, SW SW SE section 31-21-2w, was a location. Otis A. Roberts No. 1 Bentley, NE NE NW section 6-20-2w, had dug pits and cellar.

Continental Oil Co. No. 3 Conway A, SW NE SW section 16-23-3w, Billings pool, was drilling below 1,100 feet. Phillips Petroleum Co. and Shell Petroleum Corp. No. 2 Brumfield, SW SW NW section 22-23-2w, was drilling below 500 feet.

## Lincoln County

Mid-Continent Petroleum Corp. No. 1 Vinson, SW SE SE section 4-13-16, Lincoln County, had first Wilcox sand at 4,180-89 feet, topped second sand at 4,207 feet,

was bottomed at 4,285 feet and pumped 275 bbls. of oil in 23 hours.

Summit Drilling Co. and Amerada Petroleum Corp. No. 2 Thomas, NW NE NW section 2-14-2e, North Wellston area, had Dolomite at 5,094 feet, Wilcox sand 5,117 feet, total depth 5,122 feet, was acidized and made potential of 768 bbls. of oil through tubing, with 1,100,000 feet of gas.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Strader, NW NW NE section 8-13-13e, Lincoln County wildcat, was spudding.

Mudge Oil Co. No. 1 Robertson, SE NE SW section 10-14-6, new location in the recently revived Sac & Fox pool, was due to start drilling.

Helmerich & Payne No. 3 Fitch, SW SE NE section 15-14-6, was a new drilling well in the Sac & Fox field, and same operators' No. 4 Fitch, SE SE NE section 15-14-6, was a location. Wilcox Oil & Gas Co. No. 1 Royer, SE SE NE section 18-14-6, had started work.

### Okmulgee County

Ed Smith and others No. 1 Keaton, NW SE NE section 1-14-12, Okmulgee County, was completed as a 35-bbl. well in Dutcher sand topped at 2,178 feet, total depth 2,210 feet.

Royal Oil & Gas Co. No. 9 Johnson, SW NE NE section 29-15-14, had sand at 1,668-79 feet, total depth, and pumped 20 bbls. of oil daily.

Adkins and others No. 1-A Ware, C E half NE NE section 36-16-11, topped Bartlesville zone at 1,610 feet, had sand at 1,685 feet, total depth 1,762 feet, and pumped 8 bbls. of oil daily.

B. & H. Oil Co. No. 1 Kennedy, SW cor. section 34-16-13, was dry and abandoned at 1,102 feet, total depth.

J. Garfield Buell No. 2 Replogle, SE NE SW section 4-13-11, was a location.

### Tulsa County

Somerset Oil Co. No. 1-B Powell, SE cor. section 26-17-12, had Wilcox sand at 2,319-30 feet, total depth, the hole filled with water and it was abandoned.

Cummings No. 7 Bunger, C E half NW NW section 27-17-13, was dry and abandoned at 1,992 feet, total depth.

C. E. Duffield No. 6-B Coonhead, NE NE SE section 1-17-12, Tulsa County, had sand at 1,300-12 feet, total depth 1,316 feet, was shot and pumped 5 bbls. of oil daily.

R. E. Downing and others No. 1 Pregler, C W half NW NE section 31-17-14, was dry and abandoned at 1,437 feet, total depth.

W. F. Epler No. 1 Childers, C W half SW SE section 8-18-14, found sand at 918-942 feet, total depth, and produced 450,000 feet of gas.

Trowbridge & Moore No. 1 fee, NE NW SW section 8-18-14, produced 700,000 feet of gas from sand at 926-946 feet, total depth 962 feet.

### Estimated Daily Production

Estimated daily production of Oklahoma for the week ending January 29, and for the preceding week, was as follows:

| | Barrels | |
|---|---|---|
| | Jan. 29 | Jan. 22 |
| Allen | 5,775 | 5,825 |
| Billings | 7,975 | 7,800 |
| Burbank | 7,575 | 7,675 |
| South Burbank | 13,375 | 13,500 |
| Balance Osage | 20,500 | 20,250 |
| Blackwell district | 5,350 | 5,400 |
| Bristow-Slick | 6,950 | 6,925 |
| Chandler | 2,350 | 2,375 |
| Crescent | 8,750 | 7,600 |
| Cromwell | 3,325 | 3,325 |
| Cushing-Shamrock | 10,700 | 10,750 |
| Duncan district | 3,875 | 3,875 |
| Edmond | 7,750 | 8,975 |
| Fish | 4,125 | 4,325 |
| Fitts | 69,025 | 71,325 |
| Jesse | 4,850 | 4,575 |
| Graham | 5,750 | 4,500 |
| Gray | 1,300 | 1,225 |
| Healdton | 9,375 | 9,400 |
| Hewitt | 4,100 | 4,125 |
| Holdenville | 800 | 825 |
| Keokuk | 8,150 | 8,425 |
| Konawa | 1,475 | 1,500 |
| Lucien | 12,500 | 11,600 |
| Moore | 7,025 | 9,675 |
| Oklahoma City | 134,025 | 119,950 |
| Olympic | 6,600 | 6,650 |
| Polo | 725 | 750 |
| Sasakwa and townsite | 2,400 | 2,425 |
| Sholem-Alechem | 2,950 | 2,925 |
| Seminole County: | | |
| Bowlegs | 10,400 | 10,390 |
| Carr City | 4,625 | 4,675 |
| Earlsboro | 5,400 | 5,750 |
| South Earlsboro | 675 | 675 |
| East Earlsboro | 6,225 | 6,400 |
| Little River | 9,475 | 9,450 |
| East Little River | 1,075 | 1,050 |
| Maud | 775 | 750 |
| Mission | 1,825 | 1,850 |
| Seminole | 8,500 | 8,625 |
| East Seminole | 1,925 | 1,900 |
| Searight | 3,700 | 3,775 |
| Total Seminole | 54,600 | 55,200 |
| St. Louis-Pearson | 18,475 | 18,675 |
| Tatums | 6,850 | 6,800 |
| Tonkawa-Garber-Thomas | 4,650 | 4,625 |
| Wewoka | 2,725 | 2,750 |
| Yale-Jennings | 3,750 | 3,725 |
| Other pools | 83,400 | 84,400 |
| Total Oklahoma | 553,875 | 543,650 |

### Muskogee County

McCormick No. 1 Gidney, C S half SE SW section 15-15-18, Muskogee County, had a hole full of water at 1,050 feet, total depth, and was abandoned.

### Okfuskee County

Earl Evans and others No. 3 Gooden, SE NE NE section 36-10-8, Olympic field, Okfuskee County, topped Senora sand at 1,734 feet, total depth 1,744 feet, was shot and swabbed 43 bbls. of 35-gravity oil in 24 hours.

Mead Production Co. No. 1-A Houser, NE NE SW section 10-12-11, had a showing of oil and a hole full of water in Wilcox sand at 3,572-92 feet, total depth, and was abandoned.

W. B. Pine No. 1 Knight, NE NW NE section 9-13-10, was dry and abandoned at 3,420 feet, total depth.

### Hughes County

Power Oil Co. No. 2 Cox, SW NW NE section 21-9-9, Hughes County, produced 3,000,000 feet of gas and was completed at 480 feet, total depth.

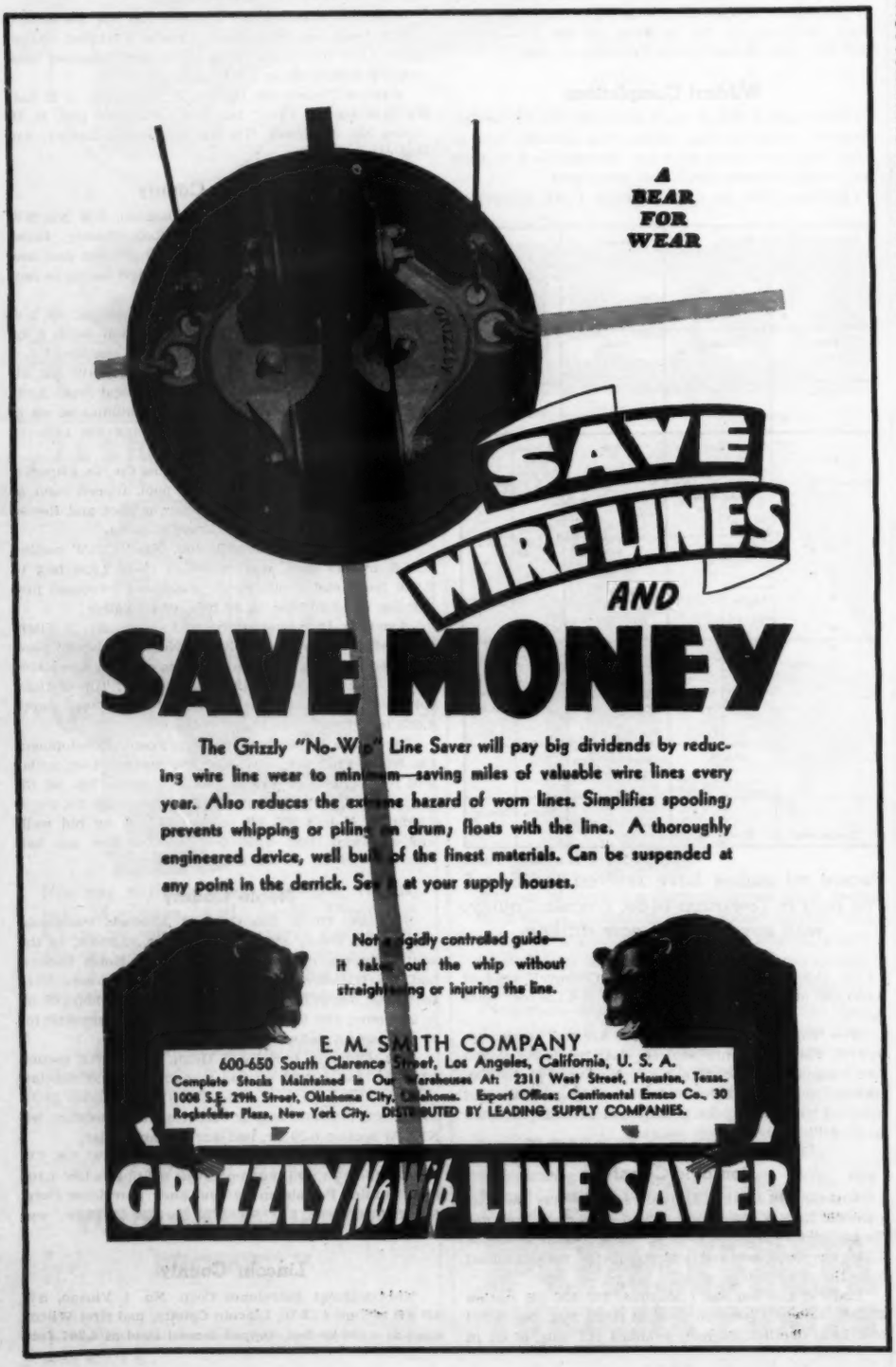
E. H. Moore and others No. 1 San Antonio Joint Loan & Stock Bank, NE NE NW section 30-4-9, was a location. Troup & Strickland No. 1 Brown, NW SW NE section 32-6-8, was drilling below 235 feet.

### Pottawatomie County

Southwest Petroleum Co. No. 2 Gunter, SE NE SW section 32-11-4, Shawnee pool, Pottawatomie County, topped Earlsboro sand at 4,377 feet, total depth 4,484 feet, and flowed 160 bbls. of oil in 24 hours.

### Carter County

Roy I. Kyle No. 5 Dougherty, NW SW SE SW section 17-4s-2w, Carter County, had sand at 1,473-90 feet,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total depth, was shot and pumped 31 bbls. of 32-gravity oil daily.

Shell Petroleum Corp. No. 9 Richards, NE NE SW section 9-4s-3w, Healdton field, topped broken sand series at 1,003 feet, was bottomed at 1,141 feet, plugged back to 1,138 feet, and pumped 8 bbls. of 31-gravity oil daily.

Gulf Oil Corp. No. 2 McCrary, NW NE NW section 5-1s-3w, Tussy pool, was bottomed at 3,386 feet, perforated casing at 3,260-80 feet and pumped 37 bbls. of 25-gravity oil and 3 bbls. of water daily.

### Atoka County

Bokans & Joels No. 3 Miller, NE SW NE section 9-1s-14e, Redden area, Atoka County, was rigging up rotary.

### Garvin County

Pernell Development Co. No. 1-A Newberry, NE SE NE section 14-1n-3w, Robberson district, Garvin County, was abandoned at 1,681 feet, total depth.

### Stephens County

Adams-Prince No. 2 Frensley, SE SW NE section 34-1s-5w, an old Stephens County well, had sand at 716-748 feet, was bottomed at 1,398 feet, plugged back to sand and pumped 1½ bbls. of oil and 1 bbl. of water daily. This was no increase over original production.

Carl Carter No. 3 Warden B, SE NE NW section 34-1s-5w, was abandoned at 1,147 feet, total depth.

### Jefferson County

Palmer and others No. 4 Grayson, SW SE SW section 19-6s-5w, Jefferson County, had sand at 1,529-39 feet, total depth, and pumped 25 bbls. of 32-gravity oil and 10 bbls. of water daily, completed.

### Beckham County

Westoak Gas Co. No. 1 Anderson, C NW section 15-9-25w, Frick area, Beckham County, found Dolomite at 3,210 feet, had a junked hole at 3,335 feet, total depth, and was abandoned.

## Memorial for Old Timers At Petroleum Exposition

The "Old Timers" of the petroleum industry who have passed on will have a permanent memorial at the International Petroleum Exposition in Tulsa, R. H. Gruber, chairman of the old timers committee for the exposition and vice president in charge of oil country sales for Union Wire Corp., has announced.

A monument will be built in the sunken gardens near the replica of the original Drake well. The monument will contain a vault in which will be placed the names of these "Old Timers" who have passed on. Each exposition will see a full day of memorial ceremonies, the vault being opened and the names of those who have died will be added.

Mr. Gruber has announced that the "Old Timers" committee will be composed of the historical subcommittee: C. L. McMahon, chairman, Dal Dalrymple, B. M. Gessel, Charles Flint, James McIntyre, J. K. McGoldrick and M. F. Waters; memorial subcommittee: J. P. Flanagan, chairman, H. F. Sinclair, E. F. Cremin, Nelson K. Moody, J. J. Larkin, Henry Ketchum and W. L. Connelly; entertainment subcommittee: G. F. Bell, chairman, John Mabee, Fred Cook, W. J. Stewart, Frank Wolfe and F. G. McClintock; publicity subcommittee: John Booker, chairman, Andrew M. Rowley, Luther Williams, Jim Downing, L. M. Ladet, Jack Cashburn and Al Wall.

## BUREAU OF MINES ALLOWABLES

(Daily averages in barrels)

| State— | Forecast February, 1938 | Forecast January, 1938 | Actual production Nov., 1937 |
|---|---|---|---|
| Texas | 1,365,700 | 1,350,900 | 1,354,000 |
| California | 693,700 | 678,300 | 702,000 |
| Oklahoma | 569,700 | 566,600 | 579,800 |
| Louisiana | 239,400 | 238,400 | 238,700 |
| Kansas | 176,400 | 179,300 | 186,400 |
| New Mexico | 105,100 | 103,100 | 106,900 |
| Michigan | 52,800 | 54,100 | 54,000 |
| Wyoming | 51,800 | 55,500 | 52,800 |
| Pennsylvania | 50,400 | 51,000 | 53,600 |
| Arkansas | 36,800 | 35,200 | 42,900 |
| Illinois | 29,900 | 27,400 | 33,000 |
| Kentucky | 14,500 | 14,300 | 14,600 |
| New York | 14,000 | 13,900 | 15,100 |
| Montana | 12,400 | 13,100 | 13,800 |
| West Virginia | 10,000 | 9,600 | 10,200 |
| Ohio | 9,000 | 9,500 | 9,100 |
| Colorado | 4,400 | 4,300 | 4,400 |
| Indiana | 2,200 | 2,300 | 2,200 |
| Totals | 3,438,200 | 3,406,800 | 3,473,500 |


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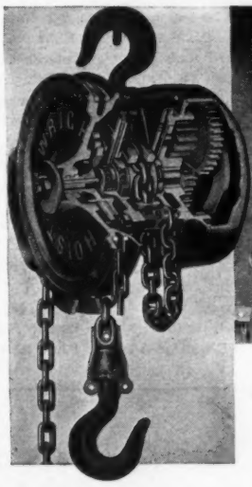
20 Thrust Bearing on Bottom Hook
21 Oil Hole Covers



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# Central West

By STAFF CORRESPONDENT

# Completions and New Tests Were Few in Illinois Basin

MATTOON, Ill., Jan. 31.—The past week was a dull one in results and in new work started in the Central Basin fields. Only five completions were recorded. All were oil wells with a combined initial production of 1,163 bbls.

Shell Petroleum Corp. completed No. 2 Criley, NW NE SE section 2-1n-1w, in Clinton County at 1,372 feet. Benoist sand lay at 1,345-72 feet. The well swabbed 196 bbls. of oil and 29 bbls. of salt water the first 24 hours, and when put on the pump produced 175 bbls. of oil and 16 bbls. of water. The following day it made 138 bbls. of oil and 12 bbls. of water and on the third day pumping it produced 168 bbls. of oil and 46 bbls. of water. It was an unusually good producer for a Benoist sand well.

Gulf Oil Corp. No. 6 Coen, C E half SW SW section 4-3n-9e, Richland County, was acidized with 1,260 and then with 4,000 gallons, but made only a 30-bbl. pumper. It was completed.

Ohio Oil Co. No. 8 Arbuthnot, C E half SE NE section 8-3n-9e, was completed in pay at 2,934-51 feet. It flowed 475 bbls. of oil through 2½-inch tubing in 24 hours, the lowest joint of tubing having been perforated.

Lewis Godlin and Pete Huffman No. 1 Shannon, C E half SE NE section 17-3n-9e, Richland County, was acidized with 1,000 and then with 4,000 gallons and put on the pump. It produced 100 bbls. of oil and 2 bbls. of water from pay at 2,956-58 feet. It had showings of oil at intervals from 2,888 ot 2,952 feet, total depth 3,021 feet.

Pure Oil Co. No. 1-F Dora Heidrick A, NW cor. NE NW SE section 17-3n-9e, Richland County, flowed 383 bbls. in a 24-hour completion test from pay at 2,950-65 feet, total depth 3,000 feet.

Richland County is the busiest drilling area in the state. Illinois Canadian Oil Co. is rigging up rotary for No. 1 Lawrence Padgett, SW NE NE section 17-3n-9e. Pure Oil Co. No. 9 J. O. Coen, C E half NE SW section 4-3n-9e, had pay at 2,948-51 feet and 2,953-57 feet, total depth 3,000 feet, and was running casing. Same company made a location for No. 1 John Handley, 450 feet from S line and 330 feet from E line of NE quarter section 5-3n-9e. Pure Oil Co. has derrick up for No. 12 J. O. Coen, C E half NW NE section 9-3n-9e, and made a location for No. 3 Frost, C W half NW SW section 9-3n-9e. Max Pray and others No. 1 J. R. King, SW SW SE section 21-3n-9e, had a small showing of oil from 3,036 to 3,113 feet, total depth 3,117 feet, and casing was being run preparatory to testing. Papoose Oil Co. No. 1 Lynch, SW SW NE section 5-3n-10e, was drilling at 2,410 feet. Miller & Ake No. 1 Schlechmyer, NE SW SE section 16-3n-10, is drilling. Derrick is up for American Exploration Co. No. 1 Johnston, NW NE NW section 29-4n-9e. Burkan Oil Co. and others No. 1 Allen, C SW NW section 27-4n-10e, had pay at 3,036-41 feet and flowed 827 bbls. of oil in 104 hours or at the rate of 111.41 bbls. per day. Tubing will be pulled and the pay acidized.

In Jackson County, Stanolind Oil & Gas Co. No. 1 Livier, SE SW NW section 20-7s-4w, was drilling at 1,730 feet. Top of the Ste. Genevieve lime was found at 1,215 feet and St. Louis at 1,360 feet.

In Franklin County, Robert E. Markham No. 1 Mitchell Estate, SW SE SE section 18-5s-3w, was dry at 2,946 feet, but not yet abandoned. It is reported that Roy Benoist of Mount Vernon will take over the well, plug it back to, and test, the Cypress sand topped at 2,467 feet. McClosky lime was found at 2,816-19 feet. Some saturation was noted at 2,485-87 feet and 2,502-15 feet.

In Randolph County Mabee Consolidated Corp. and others No. 1 Wilson, CSL NE SE NE section 3-4s-5w, was drilling in Trenton limestone at 3,320 feet.

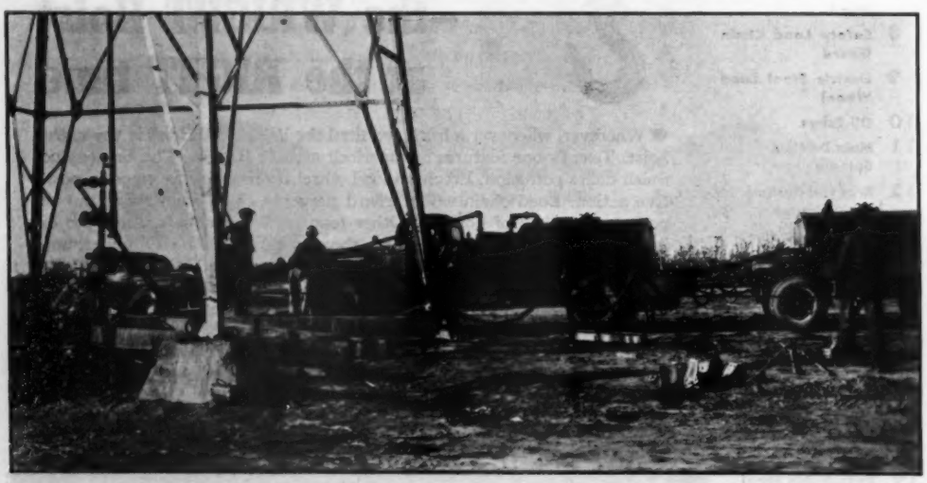
In Clinton County, Group Oil Corp. No. 1 Jolliff school lot, in the extreme SE corner SW SW section 1-1n-1w, had saturated Benoist sand at 1,341-74 feet, and had set pipe at 1,334 feet and was rigging up standard tools. Shell Petroleum Corp. and Adams Oil & Gas Co. were rigging up rotary for No. 1 Criley-Felton, C SW SW NW section 1-1n-1w. Adams Oil & Gas Co. No. 2 Schmitz, NE SE NE section 2-1n-1w, was testing and No. 3, NW NE SE section 2, was drilling at 900 feet. Shell Petroleum Corp. No. 3 Criley, SW NE NE section 2-1n-1w, had Benoist sand at 1,339-70 feet, total depth 1,371 feet, and was rigging up standard tools. Taylor Noll and Max Connery were drilling at 1,185 feet in NW cor. SE SW section 12-1n-1w. Adams Oil & Gas Co. (formerly Taylor Brothers) No. 1 Hefter heirs, NW cor. NE SW NE section 13-1n-1w, was fishing for bit cones, total depth 1,068 feet. Santa Fe Oil & Gas Co. was drilling at 555 feet in No. 3 Robbins, C E half SW SE section 5-1n-3w. Holle & Willes No. 1 Hughes estate, C N half NE NW section 18-3n-2w, was drilling at 470 feet.

In Lawrence County, Trio Oil Co. was rigging up machine for No. 1 Trueblood, SW SW SW section 14-3n-11w, measuring from Indiana principal meridian.

In Bond County, McBride, Inc., No. 1 Butler, SW cor. SE section 30-4n-2w, was drilling at 400 feet.

In Clark County, M. V. Yeager No. 1 Robinson, SE SW NW section 17-10n-11w, measuring from Indiana principal meridian, was drilling in Devonian limestone at 2,155 feet.

In Franklin County, Washburn Petroleum Co. No. 1 C. H. Neal, C E half SE SE section 6-5s-4e, was drilling at 2,100 feet.



*Acidizing is a common practice in the McClosky formation in the Illinois Basin. Here is a Dowell, Inc., crew acidizing a well for Pure Oil Co. on the Brissenden farm near Clay City, Ill.*

## CENTRAL OHIO

FINDLAY, Ohio, Jan. 31.—Six gas wells, three oil wells and one dry hole were completed in Central Ohio last week.

In Ashland County, Hanover Township, Ohio Fuel Gas Co. No. 1 R. L. Parrott, section 14, made 144,000 feet of gas from Clinton sand at 2,873-88 feet.

In Knox County, Union Township, H. E. Perkins No. 1 Lena Banbury, section 4, is good for 125,000 feet of gas from Clinton sand at 2,803-17 feet. In Union Township, Ridgeway and others No. 1 Walter Didinger, section 4, made 238,000 feet of gas from the Clinton sand at 2,778-98 feet.

In Licking County, Fallsbury Township, G. H. Long No. 6 William Varner, section 14, produced 20 bbls. of oil in the first 24 hours after a shot in Clinton sand at 2,962-3,022 feet. In Perry Township, Armbruster & Stricker No. 1 George W. Priest, section 7, made a small gas well from the Berea at 708-12 feet.

In Meigs County, Scipio Township, D. E. Chase No. 1 D. E. Chase, Fraction 13, was drilled to 458 feet and abandoned.

In Stark County, Plain Township, East Ohio Gas Co. No. 1 Ira Smith, section 15, made 2,689,000 feet of gas initially from Clinton at 4,587-4,619 feet.

In Summit County, Green Township, East Ohio Gas Co. No. 2 Charles Hartong, section 32, is good for 2,166,000 feet of gas per day from the Clinton at 4,179-4,231 feet.

In Washington County, Barlow Township, Devitt and others No. 21 Francis Fisher, section 6, made 2 bbls. of oil the first 24 hours after a shot from the Stray sand at 856-68 feet. In Independence Township, J. O. Herlan No. 4 Elmer S. Decker, section 34, produced 3 bbls. of oil the first day after a shot in Peeker sand at 930-98 feet.

In the Lima field, in Putnam County, Blanchard Township, Morton Stewart Petroleum Co. No. 7 W. D. Williams, section 22, is good for a 20-bbl. pumper from the Trenton sand at 1,338-70 feet.

## EASTERN KENTUCKY

ASHLAND, Ky., Jan. 31.—Two oil well and one gas well completions are included in the weekly news from the Eastern Kentucky field, while some other wells are nearing the completion stage.

Oakes & Barnes report the completion of No. 4 on the Andrew Combs land on Billie's Fork in the Big Sinking district of Lee County at a total depth of 1,012 feet with a daily production of 25 bbls. of oil.

Kentucky Oil Producers completed No. 2 on the John Rose farm in the Keaton district of Lawrence County. The well reached a total depth of 841 feet and shows a daily flow of 3 bbls. of oil.

Kentucky-West Virginia Gas Co. No. 560 on the Melissa Ward farm on Rockhouse Fork of Rockcastle,

*(Continued on Page 89)*

# Oil Fields of the U.S.S.R.—

## *Geology and Productiveness*

By WILLIAM J. KEMNITZER

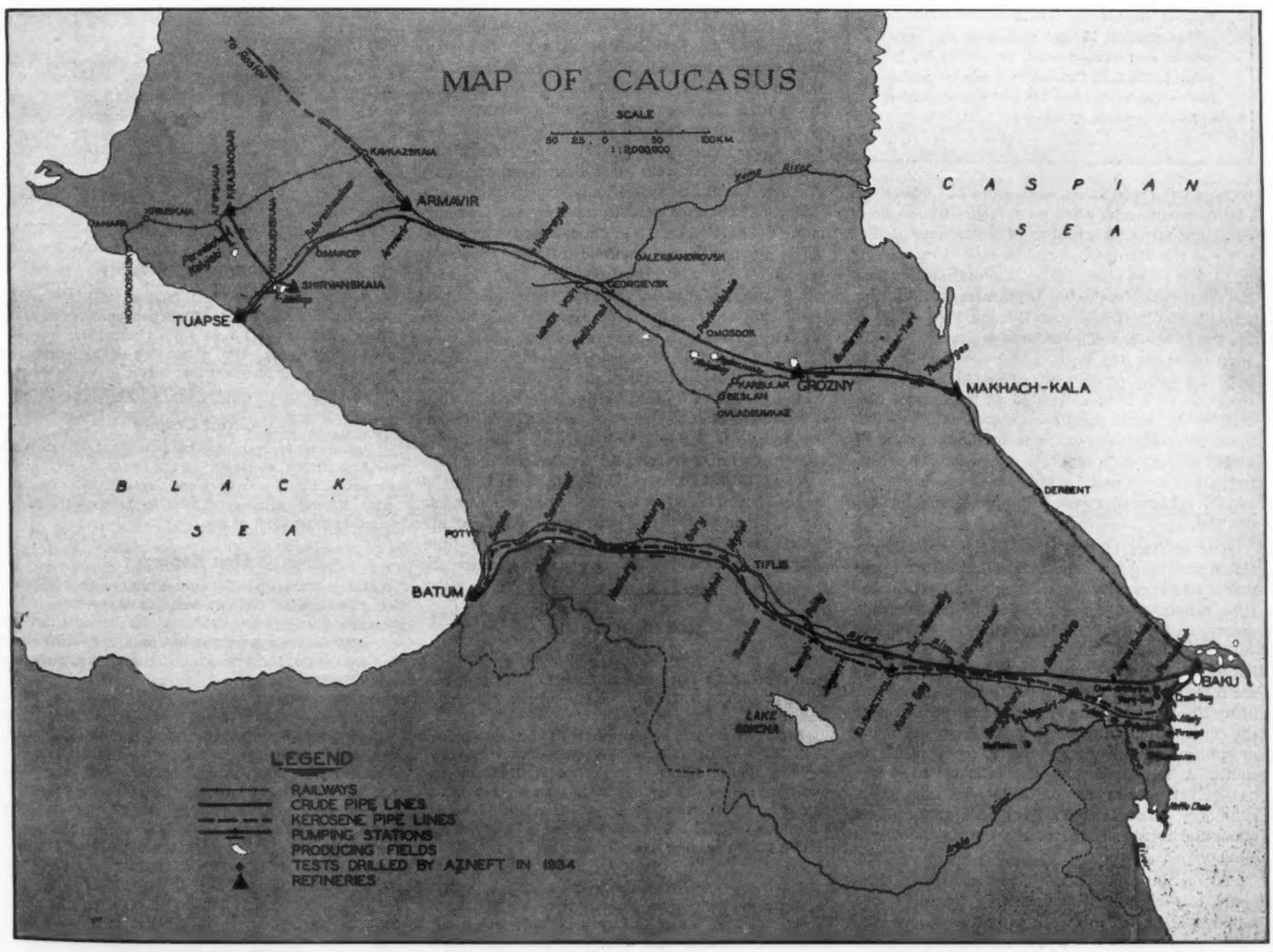
*Kuban.* This area lies south of the Kuban River along the extreme northwestern flank of the Main Caucasus Range. It is a bare foothill country of sharp folds roughly paralleling the main mountain range. Nearly all of the anticlines are of the brachianticlinal diaper type; that is, consisting of several minor folds involved with a larger one, and eroded along the axes to show the older beds. Some of the anticlines are overturned, while others are so deeply eroded that Cretaceous rocks are exposed. In general, the intensity of folding and erosion decrease northward and westward away from the Caucasus.

Oil is obtained in conjunction with anticlinal folds from clayey sands, fissured marls, and fine grained quartz sands of Upper Miocene and Middle Miocene age at depths ranging from 450 to 1,500 feet. The accumulations are characteristically lenticular.

Seepages and brea deposits are abundant throughout the area. Isolated productive wells are numerous, but most of them are of small output. Development at present is confined to only a few localities, namely, Krymsko-Kudado, Keslerovo-Vareikovo, Adaghum, Kalujski, and Ilsk. In the first of these localities development began in 1866. Total production from this field up to 1935 amounted to only about 850,000 bbls. At Keslerovo-Vareikovo development began in the 1880s; at Adaghum in 1905-1906, but modern activity begins with the Soviets in 1923. Initial productions have ranged from 35 to 770 bbls. with the larger output from the deeper wells. Gravity of the oil ranges from 39° A.P.I. for the lower sands to 15° A.P.I. from the upper sands. Most of the prospecting at present is for deeper production for which there is considered a good chance to the north and west.

*Taman Peninsula.* This area marks the western terminus of the Main Caucasus Ridge. It is a low marshy land from which rise a parallel series of anticlinal ridges extending across the country in an east-west direction. Mud volcanoes are numerous. They occur along or near the axes of the sharp folds, and cover the surrounding plain with ejected mud. Oil and gas usually accompany the mud. The floor of the plain consists of sands, silts, clays, and muds of Lower Quaternary and Recent age, but the cores of the anticlinal ridges are rocks of Oligocene and Lower Miocene (Maikop) age. These are flanked by Upper Miocene and Pliocene beds. The oil is associated mainly with the Miocene.

Since 1864, many wells have been drilled on the Taman Peninsula, but only a small quantity of oil has been obtained. At present only one field, the Suvorovo-Cherkess, in eastern Taman about 15 miles from the town of Anapa, is being operated.



Here, 20 wells together produce less than 10 bbls. of oil a day from depths ranging from 300 to 1,300 feet. The oil is of high gravity and comes from formations in the Pliocene and Miocene. The structure is a dome of the crypto-diaper type.

*Crimea.* This area occupies the island-like peninsula between the Sea of Azov and the Black Sea. Oil seepages occur in the folded Oligocene and Miocene beds along the northern foothills of the Yaila Range and in the southern foothills of the Kertch Peninsula opposite the Taman Peninsula. In 1860 some drilling was done at Chongelek, 18 miles south of Kertch and at other localities in the Kertch country. Oil ranging from 27° to 30° A.P.I. gravity was found in small quantities and an intermittent production developed. Although not productive at present the area is believed to offer some possibilities in the less disturbed localities away from the mountains.

### Georgian District

The Georgian district lies between the Main Caucasus and the Small Caucasus at the eastern end of the Black Sea and extends from the Black Sea Coast eastward to beyond Tiflis to where the Alazan River joins the Kura. Seepages of oil occur throughout the district, and some have been exploited commercially for many years by means of hand-dug wells. A number of wells were drilled prior to the European war but most deep drilling has taken place since 1921. The total output from the entire district during 1936 averaged less than 125 bbls. per day. Although the district abounds in evidences of oil, and structures are numerous, the country seems too broken and denuded to hold hope for large production. Nevertheless, proved reserves have been estimated at more than 220,000,000 bbls., and possible reserves at 973,000,000 bbls. Most of the country is of mountainous dissected relief with absolute elevations reaching heights of 6,000 and 7,500 feet. At the beginning of 1937, six localities were being prospected by deep drilling.

The geology of this district is extremely variable and complex. The mountain-making movements which occurred in the beginning of Miocene time converted a former region of intense sedimentation into a mountainous country which was subsequently denuded. Along the Caucasus axis, bands of successive series of sedimentary strata are folded more or less parallel to the regional line of uplift. The sediments are metamorphosed near the central mountain core but the degree of metamorphism diminishes gradually from north to south. A belt of Jurassic shales is replaced successively by sediments of Cretaceous and Paleogene age. These later Tertiary beds accumulated along the southern side of the Caucasus geosyncline.

The substratum of the Caucasus geosyncline seems to have been subdivided by fractures into separate areas which at different times were subject to movements of varying intensity and direction. These movements were followed by regressions and subsequent transgressions of the sea. The lithology of the rocks is highly variable. A thick series of terrigenous and volcangenetic sediments accumulated in the geosyncline during Paleogene time. During the Neogene these formed an independent folded system. Subsequently a thick series of younger friable strata concealed the older buried strata. The total thickness of the Neogene formations that has survived denudation is about 15,000 feet. The Pliocene ranges from 1,200 feet in the south to 3,000 feet in the north. The Paleogene and Eocene sediments are about 18,000 feet thick. These Tertiary beds consist mainly of shales, sandstone, tuffs, and volcanic breccias.

The oil is associated with Tertiary rocks involved in anticlinal structures which are characteristically overthrust. Oil seepages are confined to lines of tectonic disturbances. These are mainly in the form of long folds and overthrust faults paralleling them in a northwest-southeast direction. Although the district is one of innumerable anticlinal structures, many are of such amplitude and so broken, eroded and otherwise marred that they are unsuitable as traps for large quantities of oil. In addition, porous rocks are deficient for reservoirs, many of the sandstones being completely sealed. The stratigraphic range of oil in the Georgian district is great, from the Pliocene to and including the Cretaceous, but the commercially important horizons are in the Pliocene (Upper Shirakian) and Upper Miocene.

### Oil-Bearing Localities

The oil-bearing localities are scattered over the district but comparatively few have reached a stage of importance. Broadly, however, they extend in two belts across the country from southeast of Tiflis northwest to the Black Sea just north of Batum. The southern belt, including from east to west the areas of South Kakhetia (including Gambor and Mirzaani), Eastern Trialeti, South Imeretia and Guria, follows roughly up the valley of the Kura River across the divide into the valley of the Rion River to the Black Sea. The other, comprising mountainous Kakhetia (including the eastern part of South Osetia), Okriba-Racha (including mountainous Abkhzia) and Abkhazia-Mingrelia, extends along the base of the Main Caucasus from north of Tiflis northwestward to the Black Sea coast. Although oil has been produced commercially in very small amounts at many places in these areas, only one locality at present resembles anything like an oil field. This field is Mirzaana in the Kakhetia area southeast of Tiflis between the Kura and Alazan Rivers. It is located on a gentle southeastern slope facing the Great Shiraki Steppe on a broken anticlinal fold which has been subjected to sharp bending along the strike where it is displaced by an overthrust fault. Sixty wells have been drilled here since 1930. Initial productions have ranged from 20 to 210 bbls. of oil a day but the sustained output is small. During 1936, the production averaged approximately 15 bbls., daily. The oil is of high gravity and contains about 22 per cent gasoline.

## Mr. Kemnitzer's Articles

**This is the concluding installment of Mr. Kemnitzer's article on the oil fields of the U.S.S.R.; their geography, geology and relative productiveness, the first part of which was published in the December 31 International edition and the second part in the January 13 issue, and the third January 20, page 103.**

**Mr. Kemnitzer has previously contributed articles in The Oil and Gas Journal on Soviet reserves, August 19 and September 23; Soviet exports and home market, September 30; Refining in U.S.S.R., October 7; Crude oil production in Russia, October 14; and Soviet problem of future reserves, October 28, 1937.**

## Kansas Fields

*(Continued from Page 78)*

total depth 3,811 feet, plugged back to 3,810 feet, and made potential of 572 bbls. of oil, cutting 2 per cent water.

First reports of new operations in Stafford County: Fred Rust No. 1 Huliman, SW cor. section 5-22-12w, rig; Stanolind Oil & Gas Co. No. 1 Hinkle, NE cor. section 5-22-12w, rigging up rotary; same company's No. 1-B McComb, SE NE SW section 14-24-11w, rig; Stanolind Oil & Gas Co. and others No. 2 Volker A, NW SW NE section 23-24-11w, moving in material.

### Butler County

Richmond Drilling Co. No. 1 Lygriesse, NW NE NW section 25-27-3e, Butler County, had Simpson zone at 2,982 feet, Arbuckle lime 3,041 feet, total depth 3,077 feet, plugged back to 3,009 feet, and pumped 4 bbls. of oil and 12 bbls. of water, completed.

H. H. Patton No. 1 Shriner, SE SE SW section 33-37-6, had dug cellar and pits.

### Marion County

Ryan & Urschel No. 1 Fike, NE cor. section 28-17-4, Lost Springs area, Marion County, topped Viola lime at 2,447 feet, water intruded at 2,466 feet, total depth, and it was abandoned.

### Woodson County

C. L. Sheedy and others No. 10 Klick, SW SW SE section 20-25-14, Woodson County, topped Bartlesville sand at 1,415 feet, total depth 1,470 feet, was shot and pumped 20 bbls. of oil daily.

Same operator's No. 2 Corkery, NE NE NW section 29-25-14, found Bartlesville sand at 1,410 feet, was bottomed at 1,425 feet, shot and pumped 15 bbls. of oil daily.

### Estimated Daily Production

Estimated daily production of Kansas for the week ending January 29 and for the preceding week, was as follows:

| | Barrels | |
|---|---|---|
| | Jan. 29 | Jan. 22 |
| Oxford City | 1,500 | 1,425 |
| Burrton | 12,100 | 12,200 |
| Ritz-Canton | 5,275 | 5,300 |
| Graber | 3,375 | 3,000 |
| Hollow-Nikkel | 2,500 | 2,475 |
| Lerado | 1,575 | 1,600 |
| Voshell | 2,275 | 2,325 |
| Wellington | 2,075 | 2,100 |
| Ellsworth County: | | |
| Lorraine | 2,875 | 3,150 |
| Other pools | 1,230 | 1,310 |
| Rice-Barton counties: | | |
| Bloomer | 4,150 | 3,575 |
| Chase | 6,700 | 7,500 |
| Geneseo | 2,625 | 2,850 |
| Raymond | 1,175 | 1,150 |
| Silica—Silica West | 17,025 | 18,250 |
| Silica—South | 2,725 | 3,000 |
| Keesling | 1,075 | 1,000 |
| Hauschild | 1,075 | 1,250 |
| Miscellaneous Rice | 6,590 | 5,870 |
| Miscellaneous Barton | 8,350 | 8,185 |
| Russell County: | | |
| Fairport | 1,625 | 2,375 |
| Gorham | 1,805 | 1,550 |
| Russell | 2,060 | 1,760 |
| Sullivan | 6,960 | 7,440 |
| North Trapp | 10,800 | 11,055 |
| Miscellaneous Russell | 9,005 | 8,475 |
| Sedgwick County: | | |
| Valley Center | 1,050 | 1,000 |
| Miscellaneous | 2,790 | 2,800 |
| Ellis County: | | |
| Bemis | 6,775 | 6,925 |
| Miscellaneous | 2,930 | 3,220 |
| Kingman County | 640 | 595 |
| Stafford County | 3,405 | 3,725 |
| Greenwood County | 9,800 | 9,675 |
| Butler County | 16,100 | 16,820 |
| Other fields | 25,060 | 25,145 |
| Total Kansas | 187,075 | 190,075 |

### Montgomery County

Neeley & Dobbins No. 1 Oakleaf, CNL NE section 5-32-17, 9 miles northeast of Independence, Montgomery County, and about 1 mile from Cherryvale, was completed for 84 bbls. of oil a day, one of the largest producers to be completed in that sector in recent months. It had Bartlesville sand at 839-867 feet.

### Grant County

Panhandle Eastern Pipe Line Co. No. 1 Illinois Bankers Life, C NW section 17-29-37, Grant County, southwestern Kansas, had first gas pay at 2,390 feet, total depth 2,750 feet, plugged back to 2,500 feet and produced 6,000,000 feet of gas.

### First Reports

New work in Cowley County: Phillips Petroleum Co. No. 2 Starkey, NE NE SE section 16-30-4, drilling ahead; Wakefield No. 1 White, NW NW NE section 4-33-4, rig.

In Graham County, Continental Oil Co. and Cities Service Oil Co. No. 1 Trexler, C E half E half NE section 15-9-21w, location.

In Greenwood County, F. Kelly and others No. 1 Neuschwarger, NE NE NE SW section 25-22-12, location; Lyke No. 7 Beanchot, C W half W half SE section 5-24-12, machine.

In Harper County, Franklin Drilling Co. No. 1 Walts, NE NE SW section 24-34-6w, wildcat, had spudded.

In Rice County, Herndon Drilling Co. No. 1 Froning, NW cor. section 15-18-8w, rigging up rotary; McPherson Drilling Co. No. 3 Yaple, NW SE SE section 10-21-7w, moving in material; Mid-Plains Oil Co. No. 1 Yaple, SW NE SE section 10-21-7w, rig.

In Sumner County, Stelbar Oil Corp. No. 18 Erker, NW SE NW SW section 33-31-1w, drilling below 1,400 feet.

# Rocky Mountain Area

By
T. R. INGRAM

# Some Montanans Favor Hunt for Markets, and No Proration

DENVER, Colo., Jan. 31.—G. R. McConnell's black oil discovery in the Muddy in the North Big Hollow district, Wyoming, showed for 50 bbls. per day before deeper drilling was resumed. The Ohio Oil Co. No. 13 Harrison & Cooper, in the Rock River field, made 80 bbls. per day initially from the Sundance. Refinery and producing acreage deal was made in Park County. The Garland Syndicate No. 1 Government, which extends the Garland gas area, was completed for 2,230,000 feet of gas. The Mountain Fuel Supply Co. No. 1 Lauzer, Middle Baxter Basin, was completed for 2,000,000 feet of gas per day in the Frontier.

Montana's complex crude oil situation showed several new developments. One well, Henry Vander Pas No. 1 Thompson, was completed in Kevin-Sunburst for 150 bbls. per day.

The California Co. deep test in North Dakota will shut down until spring.

## NEW MEXICO

Allowable production for New Mexico for the first half of February was set at 105,000 bbls. daily, a reduction of 2,000 bbls. from the January figure. Some 4,000 bbls. of the allowable is for export from Artesia, Grayburg, Jackson and Maljamar areas in Eddy County, the remainder being for domestic production.

Partial closing of the 2-mile gap between the north and south sectors of the Vacuum area, Lea County, was imminent at Magnolia Petroleum Co. No. 3 State-Bridges, section 23-17-34. Pay was topped at 4,497 feet and oil rose 3,000 feet in the hole in three hours. At 4,509 feet, total depth, the well made a small head, followed four hours later by a 30-minute head, and was shut in pending decision to shoot or acidize. Phillips Petroleum Co. No. 1 Hale, C NE SE section 35-17-34, was preparing for production test at 4,500 feet, total depth, and several other wells in the Vacuum district were drilling ahead.

Few southeastern New Mexico wells were completed the past week, but several tests were in pay formations and due for early completion. Completions of the week in Lea County included the following:

Texas Co. No. 2-B Cagle, C SW SW section 15-26-37, in the Rhodes high gas area of extreme southeastern Lea County, had sand at 3,015 feet, total depth 3,216 feet, was shot and produced 5,120,000 feet of gas.

Emperor Oil Co. No. 1 Johns Permit, C SW NW section 24-17-32, had pay at 4,190 feet, total depth 4,390 feet, plugged back to 4,360 feet, and flowed 23 bbls. of oil daily through tubing, with 200,000 feet of gas.

Eastland Oil Co. No. 1 Waldrep, C SE SE section 1-20-38, wildcat near the Texas line, was dry and abandoned at 4,755 feet, total depth. It had a showing of dead oil at 3,720-30 feet, slight showings of gas at 3,730-40 and 3,780-90 feet, and on drill stem test at 4,505-4,657 feet, open 30 minutes, tested 10,000 feet of gas.

Repollo Oil Co. No. 2 White, NW NE SE section 24-20-36, was acidized and flowed 43 bbls. of oil in six hours through tubing from pay topped at 3,826 feet, total depth 3,866 feet.

Stanolind Oil & Gas Co. No. 13-A Gilluly, C SE NW section 24-20-36, found pay at 3,770 feet, total depth 3,865 feet, was acidized and flowed 264 bbls. of oil through choke in 12 hours, with 300,000 feet of gas.

Texas Pacific Coal & Oil Co. No. 7-A State, Account 2, C NW NW section 8-22-36, found top of pay at 3,825 feet, was bottomed at 3,875 feet in lime, swabbed 100 bbls. of oil naturally in 14 hours; was acidized and flowed 37 bbls. of oil an hour, cutting 2 per cent water, through tubing, accompanied by 500,000 feet of gas.

### Lea County

Amerada Pet. Corp. No. 6 Byrd, SE sec. 12-20-36. Loc.

Amerada Pet. Corp. No. 2 Corrigan, C S½ SE NE sec. 4-22-37. Drlg. 3,789 ft.

Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,585 ft.; set 8-in. 2,573 ft.

Anderson-Prichard Oil Corp. No. 1 Carlson, SW cor. sec. 23-25-37. Loc.

Anderson-Prichard Oil Corp. No. 2-D Langlie, C NW NE sec. 8-25-37. Loc.

Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,610 ft.

Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,325 ft.

Barnsdall Oil Co. No. 2 J. Whitten, SE NE SE sec. 33-23-36. Drlg. 1,440 ft.

Cities Service Oil Co. No. 2-A Clossen, NE sec. 18-22-36. Drlg. 3,550 ft.

Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.

Continental Oil Co. No. 1-A-22 Elliott, C SW SW sec. 22-22-37. O.W.D.D.; T.D. 3,552 ft.; to deepen.

Continental Oil Co. No. 3-B-6 Elliott, C SE SE sec. 6-22-37. T.D. 3,778 ft.; C.O.

Continental Oil Co. No. 1-B-9 Elliott, NW sec. 9-22-37. T.D. 3,420 ft.; set 5½-in. csg. 3,417 ft.

Continental Oil Co. No. 1-A-20 Jack, C NE SE sec. 20-24-37. Drlg. 1,125 ft.

Continental Oil Co. No. 3-B-31 Lockhart, SE sec. 31-21-36. T.D. 3,924 ft.; acd.; tstg.

Continental Oil Co. No. 1-A-31 Marsh, SE sec. 31-20-39. Wildcat. Drlg. 3,888 ft.

Continental Oil Co. No. 7-A-14 Sanderson, NE SW NE sec. 14-20-36. T.D. 3,764 ft.; set 5½-in. csg. 3,759 ft.

Continental Oil Co. No. 4-B-10 Sanderson, NE SE SE sec. 10-20-36. Drlg. 3,750 ft.

Continental Oil Co. No. 3-E-17 State, C NW NW sec. 17-22-36. Drlg. 940 ft.

Continental Oil Co. No. 1-F-1 State, C SW SW sec. 1-21-36. Drlg.

Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.

Culbertson & Irwin No. 4-A Humphrey, NE SE NW sec. 3-25-37. T.D. 3,463 ft.; to shoot.

Culbertson & Irwin No. 5-A Humphrey, NE NW SE sec. 3-25-37. T.D. 1,302 ft.; drlg. plug.

Culbertson & Irwin No. 7-A Humphrey, NE SW SE sec. 3-25-37. Loc.

Culbertson & Irwin No. 1 Liberty Royalty, NW sec. 3-25-37. T.D. 2,945 ft.; fsg.

Dalport Oil Corp. No. 1 Leonard, C SE NW sec. 29-26-38. Wildcat. Drlg. 3,190 ft.

Danglade & Clower No. 1 Clifton, C SW SW sec. 4-22-37. T.D. 3,710 ft.; tstg.

Danglade & Clower No. 1 Glier, C SW NE sec. 33-22-37. T.D. 1,060 ft.; S.D. repairs.

L. E. Elliott No. 1 Elliott, NE NE SE sec. 26-20-36. Drlg. 3,495 ft.

Empire O. & R. Co. No. 1-G State, sec. 2-21-36. T.D. 3,900 ft.; S.D.

Empire O. & R. Co. No. 2-B State, C SE SW sec. 2-21-37. Drlg. 3,875 ft.

A. R. Eppenauer No. 1 Stuart, NW NE NE sec. 22-25-37. M.I.M.

J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.

Geo. F. Getty No. 1 Riggs, NW sec. 1-26-37. Wildcat. Drlg. 1,250 ft.

Geo. F. Getty No. 1-F State, C NE NE sec. 36-17-34. T.D. 1,550 ft.; set 9⅝-in. csg. 1,545 ft.

Gulf Oil Corp. No. 6-F Bell, C NW SW sec. 36-20-36. Loc.

Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.

Gulf Oil Corp. No. 3 Day, SE SE SW sec. 6-22-36. T.D. 188 ft.; S.D.; repairs.

Gulf Oil Corp. No. 1 Elliott, SW SE SE sec. 15-25-37. Drlg. 3,398 ft.

Gulf Oil Corp. No. 2 Elliott, C NE SE sec. 15-25-37. Drlg. 3,190 ft.

Gulf Oil Corp. No. 1 Greer, SW sec. 21-22-36. Drlg. 3,797 ft.

Gulf Oil Corp. No. 2-E Janda, NW NE NE sec. 21-23-36. T.D. 3,581 ft.

Gulf Oil Corp. No. 2-D Kutter, C SE SW sec. 8-19-37. Loc.

Gulf Oil Corp. No. 1-D Mattern, SW sec. 6-22-37. T.D. 3,425 ft.; drlg. plug.

Gulf Oil Corp. No. 3 McCormack, C SE SE sec. 32-21-37. Drlg.

Gulf Oil Corp. No. 1 LeMunyon, C NE NE sec. 28-23-37. Old well. T.D. 3,666 ft.; S.D.O.

Gulf Oil Corp. No. 2 Ramsey, C SW SW sec. 27-21-36. Loc.

Gulf Oil Corp. No. 2 Stebbins, C SW NW sec. 5-22-37. T.D. 3,535 ft.; set 6-in. 3,530 ft.

Gulf Oil Corp. No. 1 Woolworth, C NE SE sec. 30-24-37. Drlg. 3,623 ft.

Humble O. & R. Co. No. 2 Greenwood, C NE SW sec. 9-22-37. Loc.

Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.

Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.

Carl B. King No. 1-A Stuart, NW NE NW sec. 14-25-37. Loc.

Harry Leonard No. 1 Ginsberg, NW sec. 29-25-38. Wildcat. T.D. 925 ft.; fsg.

Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.

Magnolia Pet. Co. No. 1-H State, C NW NW sec. 31-17-35. Drlg. 2,052 ft.

Magnolia Pet. Co. No. 1-I State, C NW SW sec. 36-17-34. Drlg.

Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34 T.D. 4,593 ft.; flw. 51 B.O. in 1 hr., naturally.

Magnolia Pet. Co. No. 3 State-Bridges, C NW SW sec. 23-17-34. Drlg. 4,459 ft.

J. A. Mascho No. 1 Cloyd, C SE SE sec. 20-22-23. Wildcat. T.D. 3,516 ft.; S.D.O.

McDowell & Weiner No. 1 Elliott, SE cor. sec. 19-21-37. T.D. 3,821 ft.; flw. 25 B.O.P.D.; tstg.

C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; S.D.

C. T. McLaughlin No. 1 Imperial Royalties, NW SE NW sec. 9-24-37. T.D. 3,436 ft.; waiting on spudder.

National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat. Drlg. 3,695 ft.

Ohio Oil Co. No. 2 Grizzell, C NW SE sec. 5-22-37. T.D. 600 ft.; prep. to drill in.

Ohio Oil Co. No. 1 Hardy, NE NE SE sec. 20-21-37. T.D. 3,639 ft.; S.D.; repairs.

Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,590 ft.

Ohio Oil Co. No. 4 State-Hansen, C W½ SE NE sec. 16-20-37. T.D. 224 ft.; set 10-in. 220 ft.

Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.

Ohio Oil Co. No. 1 State-Warn, C SE NW sec. 21-17-35. Drlg. 1,950 ft.

Lem Peters No. 1 Graham, sec. 27-22-37. T.D. 3,367 ft.; W.O.C.

Parker Drlg. Co. No. 1 Irwin, C W½ SW SW sec. 35-24-37. T.D. 1,305 ft.; set 8¼-in. csg.

Phillips Pet. Co. No. 1 Helen, C E½ SE NE sec. 33-24-37. Loc.

Phillips Pet. Co. No. 1 Hale, C NE SE sec. 35-17-34. T.D. 4,310 ft.; set 7-in. 4,290 ft.

Phillips Pet. Co. No. 1 Commissioner, C SW SE sec. 30-17-35. Loc.

Phillips Pet. Co. No. 1 New, C E½ NE NE sec. 26-20-36. T.D. 3,850 ft.; rng. tbg.

Phillips Pet. Co. No. 1 Santa Fe, C SW NW sec. 31-17-35. Loc.

Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.

Plains Prod. Co. No. 2 Moseley, SW NE SE sec. 34-24-37. Drlg. 3,325 ft.

Repollo Oil Co. No. 1 Powhatan Carter, SW SW NE sec. 9-24-37. T.D. 3,705 ft.; P.B. 3,600 ft.; flw. 29 B.O.P.D.; C.O.

Repollo Oil Co. No. 3 Christmas, NW NW NE sec. 28-22-37. T.D. 3,726 ft.; P.B. 3,664 ft.; flw. 35 B.O.P.D.

Repollo Oil Co. No. 4 Roach, NW NW SW sec. 21-20-37. T.D. 3,875 ft.; P.B. 2,860 ft.; shot; R.U.S.T.; to C.O.

Repollo Oil Co. No. 4-D Stuart, SW sec. 10-25-37. Drlg. 1,308 ft.

Rowan Drlg. Co. No. 2-A Elliott, C NE SW sec. 27-22-37. Drlg.

Samedan Oil Co. No. 5 Hughes, C NE SW sec. 10-23-37. Drlg. 2,829 ft.

Shell Pet. Corp. and Devonian Oil Co. No. 3 Christmas, C SW NE sec. 21-22-36. T.D. 3,855 ft.; P.B. 3,840 ft.; S.D.

Shell Pet. Corp. No. 1 Grizzel, SE sec. 8-22-37. T.D. 3,568 ft.; set 5½-in. csg.

Shell Pet. Corp. No. 1-A State, C NW SE sec. 16-23-36. R.U.R.

Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.

Sindorf et al No. 1 Glier, NE cor. sec. 33-22-37. Cellar and pits.

Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.

Skelly Oil Co. No. 5 G. W. Sims, C SE NW sec. 10-23-37. Drlg. 3,519 ft.

Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.

Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.

Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.

Southern Pet. Exploitation Co. No. 2 Downes, C SW SW sec. 32-21-37. Cellar and pits.

Stanolind O. & G. Co. No. 1-A Hill, C NW SE sec. 6-21-37. T.D. 3,787 ft.; flwd. 85 bbls. oil in 12 hrs.

Stanolind O. & G. Co. No. 2-A Hill, C NE SE sec. 6-21-37. Loc.

Stanolind O. & G. Co. No. 2-C Hill, C SW NW sec. 5-21-37. Loc.

Stanolind O. & G. Co. No. 3-C Hill, C NW NW sec. 5-21-37. Loc.

Stanolind O. & G. Co. No. 4-B Myers, C SW NW sec. 21-24-37. Cellar and pits.

W. H. Street No. 3 Woods, C NW NE sec. 22-22-37. Drlg. 3,425 ft.

Sun Oil Co. No. 2 Lanehart, C NE SE sec. 20-25-37. T.D. 3,620 ft.; P.B. 3,235 ft.; est. 2,000,000 ft. gas.

Texas Co No. 1 Corbin, C NW SW sec. 19-18-33. Drlg. 3,475 ft.

Texas Co. No. 3 Fristoe, NW SE NE sec. 3-25-37. R.U. machine.

Texas Co. No. 14 Lieu Lands, SW SW NW sec. 19-20-37. Loc.

Texas Pacific C. & O. Co. No. 8-A State, Acct. 2, C SE SE sec. 7-22-36. T.D. 1,475 ft.; running csg.

Texas Pacific C. & O. Co. No. 9-A State, Acct. 2, NW SW NE sec. 7-22-36. Cellar and pits.

Tide Water Associated Oil Co. No. 2 Day, C E half NW NW sec. 6-22-36. Loc.

Two States Oil Co. No. 2 Downes, C NE NE sec. 6-22-37. Drlg.

Western Gas Co. No. 1 Cowden, SE cor. sec. 30-23-37. T.D. 3,625 ft.; C.O. after shot.

### Eddy County

F. E. Baker No 1 Eddy, NE sec. 12-22-27. T.D. 2,117 ft.; S.D.

Barnett Oil Dev. Co. No. 1 King Permit, C NW SE sec. 23-26-30. Drlg. 910 ft.

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## SMOOTH-ON makes a perfect joint at flanges that do not meet or align

IF THE gap is too wide for one gasket, several may be painted with Smooth-On No. 1, piled together and pulled up with sufficient compression to form the seal.

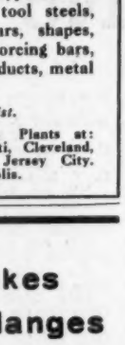


Fig. 1

If the flanges are too far apart for this method, make a spacer or "dutchman" of the right thickness (Fig. 1) by machining down an old flange, coat all contact and gasket surfaces with Smooth-On No. 1, and pull up in the regular way.

If the flanges are too far out of alignment to spring together, cut a spacer from old pipe of slightly larger size, insert permanently between the flanges (Fig. 2), and using this spacer to keep the Smooth-On from getting inside the pipe, fill the gap between the flanges with Smooth-On No. 1. After the Smooth-On No. 1 has set slightly, insert and pull up the holding bolts. Further expansion of the Smooth-On in complete hardening will wedge the Smooth-On filling so tightly into place that the joint will *never* leak.

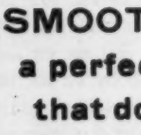
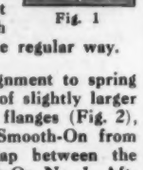


Fig. 2

And here is a tip to remember when you need a gasket, but think you have not the necessary material. Cut cardboard, thick kraft paper or wire gauze to the correct size, coat with Smooth-On No. 1, and you are all set. As Smooth-On greatly improves the tightness of any gasket, you will be surprised at what this emergency combination can do.

Hundreds more of Smooth-On repair jobs are equally simple and dependable. For instructions get the free Smooth-On Handbook.

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2-38 ----------

*Do it with* **SMOOTH-ON**


Ed Bryant No. 1 Stebbins, C NE SW sec. 19-20-29. T.D. 1,000 ft.; S.D.O.
D. & B. Oil Co. No. 2 Jenkins, SW NW NW sec. 20-17-30. T.D. 3,265 ft.; F. 25 B.O.P.D. while C.O.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
Franklin Pet. Corp. No. 1 McIntyre, NE NW SW sec. 20-17-30. T.D. 3,270 ft.; acd.; est. 150 B.O.P.D.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. T.D. 1,170 ft.; S.D.O.
F. W. & Y. Oil Co. No. 8-A Gissler, NE NW NE sec. 23-17-30. Drlg. 590 ft.
F. W. & Y. Oil Co. No. 1-B Gissler, SW sec. 15-17-30. Drlg. 1,517 ft.
F. W. & Y. Oil Co. No. 2-B Gissler, C NW NW sec. 24-17-30. Drlg. 3,392 ft.
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Geo. F. Getty, Inc., No. 1-E State, NE SW SW sec. 16-17-31. T.D. 3,567 ft.; P. 50 B.O.P.D.; to acidize.
Grayburg Oil Co. No. 10 Burch, SE NE NE sec. 19-17-30. T.D. 3,242 ft.; swbg. 30 B.O.P.D.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. Drlg. 2,628 ft.
M. A. Grisham No. 1 Chaytor, NE sec. 10-24-26. T.D. 1,967 ft.; C.O.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. T.D. 1,033 ft.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 760 ft.; S.D.O.
Woodworth Hawkins No. 1 Mack, C SW SW sec. 20-24-27. T.D. 2,125 ft.; S.D. repairs.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,495 ft.; S.D. for new rig.
B. M. Keohane et al No. 1 Shannon, SE cor. sec. 27-16-31. Preparing to spud.
Nash & Windfohr No. 8-A Jackson, sec. 13-17-30. Drlg. 3,024 ft.
Nash-Windfohr & Brown No. 2-B Stevens, NW sec. 13-17-30. T.D. 2,995 ft.; running csg.
Repollo Oil Co. No. 3-D McIntyre, SE cor. sec. 17-17-30. T.D. 3,030 ft.; 600 ft. O.I.H.
Repollo Oil Co. No. 1-A Parke, NW NE NE sec. 22-17-30. Drlg. 3,435 ft.
Paul Sargent No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
R. A. Shugart No. 1 Coulthard, C NW SW sec. 35-18-31. T.D. 4,003 ft.; U.R.
Texas Co. No. 1 Welch, sec. 30-20-31. Drlg. 1,855 ft.
W. K. Royalty No. 2 State, C NE NW sec. 16-17-31. R.U. mch.
W. O. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. Drlg 3,073 ft.
Neol Wills et al No. 1-A State, C S½ SW SE sec. 17-20-30. Drlg. 92 ft.
Martin Yates, Jr., No. 1 Conlon, SW NW NW sec. 7-24-27. T.D. 1,465 ft.; S.D. repairs.

**Chaves County**

English & Hamon No. 11 Billingslea, SE sec. 9-15-29. T.D. 3,680 ft.; P.B. 3,456 ft.; C.O.
E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. Drlg. 980 ft.
J. & L. Drlg. Co. No. 2 Hurd, SW sec. 11-11-26. M.I.M.
Mathieson et al No. 1 Code, C NE NW sec. 19-15-27. T.D. 1,407 ft.; S.D.O.

**Curry County**

Bond & Harrison No. 1 Hart ranch, C NW SE sec. 13-2n-31. T.D. 3,258 ft.; S.D.O.

**De Baca County**

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-7e. O.W. prep. to deepen from 5,850 ft.
James D. Ward No. 1 Summers, NW NE SW sec. 17-4n-20. T.D. 260 ft.; S.D.
N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. T.D. 25 ft.; S.D.

**Dona Ana County**

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

**McKinley County**

S. Dysart No. 1-Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

**Otero County**

George Mulvey No. 1 State, SW cor. sec. 11-25-8. T.D. 263 ft.; S.D.
Fred Turner, Jr., No. 1 Ella Everett, C SE SE sec. 34-22-13. T.D. 1,300 ft; S.D. for csg.
Fred Turner, Jr., No. 1 H. V. Everett, C SE SE sec. 28-22-13. Spd. and S.D.

**Roosevelt County**

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. T.D. 455 ft.; S.D.O.

## NORTHWEST NEW MEXICO

**Bernalillo County**

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 19-11n-4e. S.D. 3,750 ft. for csg.

**McKinley County**

Guarantee Oil Co. No. 1 fee, NW NW NW sec. 31-20n-9w. S.D. 327 ft.
S. Dysart et al No. 1 Bouton, CEL NW NE sec. 14-14n-10w. T.D. 1,390 ft.; re-ran 12½-in. to 1,320 ft. and S.D.
Bill Forth No. 1 Comanche, C NW SE sec. 29-20n-10w. Drlg. 200 ft.

**San Juan County**

C. E. Brawley No. 1 Godrun, C SE SW sec. 34-30n-11w. Drlg. 90 ft.
Continental Oil Co. No. 67 Rattlesnake, C SE sec. 2-29-19w. T.D. 893 ft.; P.&A.

**Socorro County**

Central New Mexico Oil Co. No. 1 Brown, SE NW sec. 16-3n-1e. Drlg. 2,050 ft.

**Valencia County**

C. A. Brober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. S.D. 900 ft.; chge. to rotary.
Big Three Oil Co. No. 1 Dalles Townsite, SE SE NW sec. 5-6n-1e. T.D. 6,114 ft.; P.B. to 5,971 ft. and cmtd. whipstock.

## COLORADO

**Adams County**

Oklahoma Oil Co. No. 1 Baxter, C SW sec. 2-3s-66w. S.D. 4,704 ft.
Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64w. S.D. 4,345 ft.

**Archuleta County**

Chromo O. & G. Co. No. 1 Fitzhugh, C SW SW sec. 34-33n-1e. Drlg. 717 ft.
K. L. Kendrick No. 1 Crowley, sec. 2-32n-1e. S.D.O. at 1,208 ft.
Pagosa Oil & Dev. Co. No. 1 Macht, sec. 32-36n-1e. Res. at 328 ft. after laying wtr. line.

**Boulder County**

J. B. Furstenberg No. 1 Foote, NE NW SE sec. 20-1n-70w. Drlg. 3,820 ft.

**Cheyenne County**

Gulf Oil Corp. No. 1 Union Pacific-Larson, C SE NW sec. 13-13s-49w. Drlg. in red ss. 4,178 ft.

**Grand County**

Interstate O. & R. Co. No. 1 Hinman, NE SE NW sec. 11-2n-81w. Drlg. 3,135 ft.

**Huerfano County**

S. W. Pressey No. 2 Alamo, C SW SE sec. 3-27n-68w. Drlg. 750 ft. in sh. with S.G.; no wtr. to this depth.
S. W. Pressey No. 1 Ojo, SW NE sec. 10-29n-69w. Recmtg. to S.O.G. at 3,550 ft.

**Jackson County**

Colorado Oil Ref. Co. No. 1 North Park Coal, NW NW sec. 18-9n-78w. S.D. 2,960 ft.

**LaPlata County**

N. Spatter No. 1 Bryce, SE SW SW sec. 31-33n-9w. T.D. 1,510 ft.; fsg. tools.

**Las Animas County**

Garcia Corp. No. 1 McClung, NE NW SE sec. 19-33s-61w. T.D. 2,000 ft. (C.D.) in sd.; S.O.&G. at 1,955 ft.; U.R. 10-in. through Glorietta sd.

**Lincoln County**

Consolidated Smelting & Metals Corp. No. 1 Hancock, NE NE SW sec. 7-17s-52w. S.D. 2,860 ft.

**Logan County**

Transylvania Dev. Co. No. 1 Sheldon, SE NW SE sec. 3-10n-55w. Drk. up; W.O. drlg. contr.

**Mesa County**

Midwest Drlg. & Dev. Co. No. 1 Callahan, NE NW SE sec. 30-8s-97w. T.D. 3,337 ft.; rec. tools; drlg. ahead.
Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. Cmtd. 13⅜-in. at 630 ft. with 480 sacks and S.D. for winter.

**Moffat County**

Morapas Pet. Co. No. 1 Coles, SW SW SE sec. 1-3n-92w. S.D. 2,670 ft.

**Montezuma County**

McElmo Oil Co. No. 1 West, NE NW NW sec. 31-36n-17w. T.D. 3,840 ft.; fsg.

**Park County**

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. Drlg. 5,647 ft.

**Pitkin County**

Glenco Dev. Co. No. 1 Govt., NW cor. sec. 9-10s-89w. S.D. 2,808 ft. to make new contr.

**Pueblo County**

Ed Solomon No. 1 Smith, E½ sec. 21-21s-60w. Bldg. rig.

**Rio Blanco County**

Buford Oil Co. No. 1 Govt., C SW SW sec. 16-1n-91w. S.D. 2,135 ft. until spring.
Texas Co. and California Co. No. 1 Unit, SW SE NW sec. 35-3n-94w. T.D. 6,918 ft.; cmtd. 7-in. at 6,817 ft. with 140 sacks; W.O.C.

**Routt County**

Mid-Colo. Pet. Co. No. 1 Omholt, NE NE SE sec. 29-4n-87w. Drlg. below 3,120 ft.
Major Oil Reserve No. 1 State, SW NW sec. 17-6n-86w. Rig; S.D. until spring.
Craig & Moore No. 1 Erwin, C SW NE sec. 33-7n-85w. Spd. and S.D.


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## WYOMING

### Albany County

G. R. McConnell No. 1 Thomas-Government, in the North Big Hollow district, showed for 50 bbls. per day of black oil in the Muddy sand at 890-920 feet and is drilling ahead at 940 feet with the Dakota as the next objective. It is a discovery well.

G. R. McConnell No. 1 Govt., CWL SW SE sec. 6-15n-75w. Drlg. 940 ft.
Wyco Oil Co., Inc., No. 3 Chappel, NE NE NW sec. 33-21n-76w. Drlg. 2,546 ft.

### Big Horn County

Paul Stock, president, and L. B. Hancock, secretary, of the Stock Oil Co., have given legal notice of the dissolution of the company. Its properties in the Big Horn Basin, including considerable production, were taken over last fall by the Yale Petroleum Corp., with which it was closely affiliated.

Ohio Oil Co. No. 3 Sidon Canal, NW SW (Lot 40), sec. 24-56n-97w. Loc.; W.O. rig.
Joan Oil Co. No. 1 Howell, sec. 32-55n-97w (Lot 63). Drlg. 2,430 ft.; 10-in. at 2,150 ft.
Peav Oil Co. No. 1 Denio, Tr. 43-C, sec. 15-55n-97w. S.D. 3,930 ft.

#### Campbell County

Prescott & Mileski No. 1 Govt., NE NW SW sec. 1-51n-73w. Rdy. to spd.
Powder River O. & G. Co. No. 1 Rhodes, NE SE SW sec. 24-49n-74w. S.D. 650 ft.

### Carbon County

The Ohio Oil Co. No. 13 Harrison & Cooper, SW SE SW section 35-20n-78w, an inside well at the southern end of the Rock River field, was completed in the Sundance at 3,157 feet, total depth, for 80 bbls. natural per day. The 7-inch was cemented at 3,077 feet. Elevation 7,197 feet.

Italo Pet. Co. No. 1 Tunney-Bragg, NE SE NW sec. 11-26n-81w. Drlg. 393 ft.
Sinclair-Wyoming Oil Co. No. 12-B Wertz, SE NW NW sec. 7-26n-89w. T.D. 3,413 ft.; rmd. 12½-in. hole and prep. to run csg.
Ohio Oil Co.-California Co. No. 4-A Kyle, 661 ft. from N line and 648 ft. from E line, sec. 26-21n-79w. Drlg. 3,400 ft.
Ohio Oil Co.-California Co. No. 4-B Kyle, C SW SW sec. 24-21n-79w. W.O. rig.
Ohio Oil Co.-California Co. No. 6 Union Pacific-Johnson, C SW SE sec. 23-21n-79w. Drlg. 4,722 ft.; top Wall Crk. 4,190 ft.
Producers Oil Co. No. 1, CNL sec. 14-20s-88w. Drlg. 194 ft.
Ohio Oil Co.-California Co. No. 5 Cronberg-U.P., C NW NW sec. 25-21-79w. S.D.O. 5,765 ft.
Ohio Oil Co. No. 14 H. & C., SE NW SW sec. 35-20n-78w. R.U.R.; contr. to Rocky Mt. Drlg. Co.
Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78w. S.D. 2,347 ft.

#### Converse County

New Era Fuel Corp. No. 1 Layne, SE NW NE sec. 27-32n-69w. T.D. 645 ft.; 6⅝-in. on bttm.
New Era Fuel Corp. No. 1 Gaspar, NW NW SW sec. 25-32n-69w. S.D. 570 ft.; 6⅝-in. at 560 ft.
D. O. Gray No. 1 Wm. Lane, SW SE SE sec. 22-32n-69w. Rng. 8¼-in. to 480 ft.
Chadron-Osage Oil Co. No. 1 O'Meara, NE NE sec. 28-32n-69w. Drlg. 200 ft.
Putnam et al No. 1 Probesh, SE SE sec. 29-32n-69w. S.D. 250 ft.
Kaufman & Quinlan Bros. No. 1 Lane, SE NW NE sec. 27-32n-69w. R.U. mach.
Ainsworth Oil Co. No. 1 Marberger, NE SE NE sec. 34-32n-69w. T.D. 619 ft.; cmtd. 6⅝-in. at 619 ft.
Hall-Thornton et al No. 1 Roth, C NW SE sec. 13-32n-69w. Cmtd. 6⅝-in. at 500 ft.; drlg. plug.
Wyoming Southern Oil Co. No. 1 Lane, C NW NE sec. 27-32n-69w. Spd. and S.D.
Chadron Osage Oil Co. No. 1 State, SW cor. sec. 16-32n-69w. T.D. 4,060 ft.; cmtd. 8¼-in. at 4,040 ft.; W.O.C.
Osage Trust Co. No. 1 Miller-Govt., SE NW NW sec. 29-32n-69w. Cmtd. 6⅝-in. at 620 ft.
Hall-Thornton No. 1 Lindley, NW SE sec. 34-32n-69w. R.U.; (first report).

#### Fremont County

Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33n-92w. Drlg. chert and sh. 3,985 ft.
Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n-96w. T.D. 7,360 ft.; trying to set packer for D.S.T. in basal Frontier.
Consolidated Oil Properties No. 3, C SW SE sec. 16-1n-1w. T.D. 630 ft. in L.; tstg. before acd.
H. Kenyon Burch No. 1 Enos, CEL NE NE sec. 28-3n-1w. S.D.O. 970 ft.; no shows.
Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. S.D. 875 ft.
Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27-90w. Drlg. 3,255 ft.

#### Hot Springs County

Italo Pet. Corp. No. 1 Skelton-Govt., SE SW NE sec. 13-44n-98w. T.D. 300 ft.; W.O.C.T.
Delaware Oil Co. No. 1 Govt.-Skelton, SE SE sec. 2-43n-96w. Drlg. 375 ft.; top Tensleep 290 ft.
Oscar B. Grace No. 4 Govt., CNL SE NW sec. 21-43n-92w. T.D. 380 ft.; fsg. bailer.
J. W. Bales No. 1 Govt., CWL SE SW sec. 28-43n-93w. Drlg. 175 ft.

#### Lincoln County

H. M. Eller et al No. 4 Govt., SE NW SW sec. 32-19n-116w. T.D. 401 ft.; will test S.O. in lenticular sd. at 397-401 ft.
H. C. Harris et al No. 1 Govt., SE NW NW sec. 32-21n-117w. Drlg. 260 ft.
Place Oil Co. No. 1 Davis, SE SE SE sec. 9-26n-11w. Drlg. 1,350 ft.

#### Natrona County

Stanolind O. & G. Co. No. 11 Wyo. Asso. Tensleep, C


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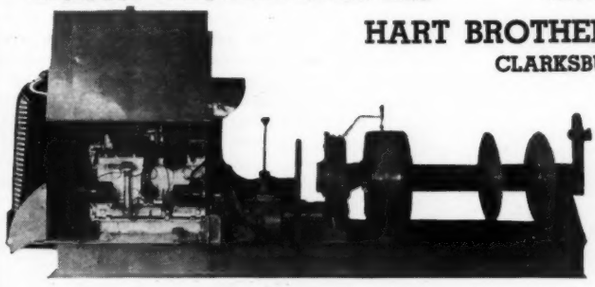
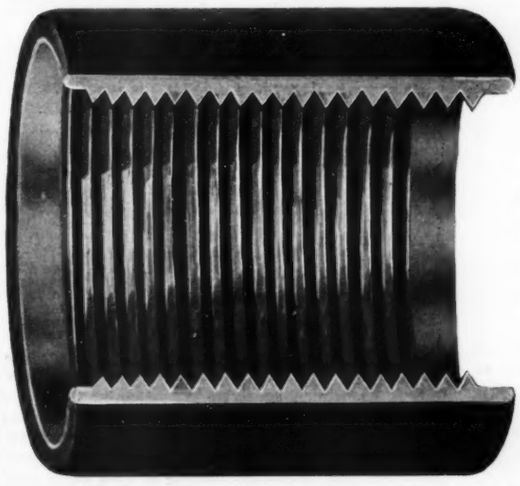

¶The machine is equipped with a 54-brake horsepower six-cylinder engine mounted on an 8-inch channel iron frame. ¶ Drum spools 5,000 feet of ⅝-inch wire line. ¶Spudding arm has 22-in. stroke. ¶Double-acting air-cooled brake holds automatically in any position. ¶Helical cut reduction gears. ¶Ball bearing equipped throughout.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NE NW sec. 35-40n-79w. T.D. 4,043 ft.; cmtd. 6⅝-in. at 4,032 ft.; tstg.
Stanolind O. & G. Co. No. 29 Wyo. Asso. Tensleep, C SW SW sec. 21-40n-79w. T.D. 4,100 ft.; cmtd. 6⅝-in. at 4,099 ft.; perf. pipe and tstg.
General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. Drlg. 5,717 ft.
Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78w. S.D.O. 1,090 ft.
Stanolind O. & G. Co. No. 11 Wyo. Asso.-T.P.-35, C NE SW sec. 35-40n-79w. T.D. 4,027 ft.; cmtd. 6⅝-in. at 4,026 ft.; will perf. and test.
Stanolind O. & G. Co. No. 8 T.P.-Wyo.-Asso.-35, C NW NW sec. 35-40n-79w. Cg. 3,827 ft.; top Tensleep 3,803 ft.

**Niobrara County**

Continental Oil Co. No. 3-A Diehlman, SE SE SW sec. 5-35n-65w. Bldg. rig.
Argo Oil Co. No. 6 Ford, NW SW NW sec. 33-36n-65w. Drlg. 1,703 ft.
C. L. Price No. 1 Lamb, NE NW NW sec. 7-35n-65w. Drlg. below 3,309 ft.
Ohio Oil Co. No. 8 Converse Sheep, NE SE SW sec. 32-36n-65w. Drlg. anhy. and rd. sdy. sh. 4,505 ft.; top Converse (Minnelusa) 4,449 ft.
J. M. Huber Corp. No. 1 H. & M., NE NE NE sec. 8-35n-65w. W.O. rig.
J. M. Huber Corp. No. 1 Joss, NE SE NW sec. 6-35n-65w. T.D. 4,096 ft.; O.W.D.D.; M.I.R.
Lewis Goekel No. 1, NE SE NW sec. 31-35n-62e. Resumed drlg. 1,550 ft.
Continental Oil Co. No. 3 Apex-1, SE SE NE sec. 34-36n-65w. T.D. 5,480 ft.; cmtd. back to 3,217 ft.; drlg. by at 3,497 ft.
W. A. Maupin et al No. 1 Berggren, NW sec. 23-35n-63w. S.D. 180 ft.
Ohio Oil Co. No. 2 Leo-O.P.C., NE NE SE sec. 35-36n-65w. Rig stdg.
MacKennie Oil & Drlg. Co. No. 3 Thompson, NW NW NE sec. 7-35n-65w. Cellar and pits; M.I. rotary.

## Park County

The Garland Syndicate No. 1 Government, NE SE section 10-56n-96w, in a fault block 4 miles to the northwest of the top of the Garland dome, was completed in the first Frontier, or Torchlight sand at 2,047 feet, total depth, for 2,230,000 feet per day of sweet gas with a rock pressure of 615 to 620 pounds. The well was drilled into the sand in 1926, but following a decision of the state supreme court prohibiting the use of gas for the manufacture of carbon black within 10 miles of an incorporated town, which caused a shutdown of the carbon black plant at Cowley, the well was shut in. Henry R. Harriman, head of the syndicate, states that the operator plans to erect a casinghead gasoline plant at the well. The gas shows about 2 gallons of gasoline per 1,000 feet of gas. The syndicate controls considerable acreage between the well and the top of the structure, much of which is in several fault blocks and which is made attractive for light oil possibilities.

Paul Stock No. 1 Govt., SE SE NE sec. 20-53n-101w. M.I.M. to deepen from 2,140 ft.
Resolute Oil Co. No. 4 Northern Pacific, C NE NW sec. 2-57n-101w. S.D. 8,657 ft.
Resolute Oil Co. No. 3 Govt., C NE NE sec. 20-57n-101w. S.D. 8,670 ft.
Ohio Oil Co. No. 4 Mack-O.P.C.-4, SE SW SE sec. 30-58n-99w. Drlg. 2,470 ft.; upper Frontier at 1,687-99 ft.; lower Frontier 1,810-21 ft.

**Platte County**

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. Drlg. 2,415 ft.; C.D.

## Sweetwater County

The Mountain Fuel Supply Co. No. 1 E. S. Lauzer, NW NW NW section 30-18n-103w, in the Middle Baxter Basin area, was completed at 1,859 feet, total depth, for 2,000,000 feet of gas per day in the Frontier at 1,690-1,725 feet. The 10-inch was set on bottom and perforated opposite the producing sand so that the well may be drilled deeper at a later date if desired. This is a rather important completion as it is in an area between the north and south domes where very little development has taken place.

Selegna Oil Co. No. 1 Union Pacific, SW SW sec. 11-20n-104w. Drlg. 2,100 ft.
Rocky Mountain Drlg. Co. No. 1 Lee, NE NW SE sec. 10-19n-104w. Drlg. 2,240 ft.
Mountain Fuel Supply Co. No. 1 Agnes Fay, 330 ft. from E line and 1,980 ft. from S line, sec. 18-18-105w. T.D. 2,506 ft.; P.B. and set 10-in. in base Frontier at 1,854 ft.; will pref. and test.
Rocky Mountain Drlg. Co. No. 1 Osborne, SE SE SE sec. 12-18n-104w. Cmtd. 8⅝-in. at 2,480 ft.; W.O.C.
Mountain Fuel Supply Co. No. 1 Hoyt, SW SW SW sec. 32-19n-103w. Drlg. 2,835 ft.
Mountain Fuel Supply Co. No. 1 Clark, NW SE SW sec. 12-19n-104w. S.D. 300 ft.
Italo Pet. Corp. No. 1 Govt., SW SW SW sec. 36-13n-95w. S.D. 610 ft.
Sinclair-Wyoming Oil Co. No. 77, SE NE NE sec. 10 26n-90w. T.D. 4,049 ft.; tstg.
Mountain Fuel Supply Co. No. 1 Union Pacific, C SW SE sec. 13-17n-104w. T.D. 3,330 ft.; P.B. to 3,241 ft.; S.D. for winter.
Mountain Fuel Supply Co. No. 1 Union Pacific, C SE NE sec. 29-15n-104w, S of Baxter Basin. Loc.

**Uinta County**

E. A. Ottman et al No. 1 Govt., C SE NW sec. 26-14n-110w. Drlg. 1,230 ft.; S.S.O.

**Washakie County**

Lewis Storm No. 1 Brome, C SE SW sec. 30-48n-90w. S.D. 1,750 ft. for csg.

**Weston County**

Chas. F. Martens No. 8, SW SW NW sec. 24-36n-64w. Loc.
Osage Trust Co. No. 1, SE NW NE sec. 22-36n-64w. Drlg. below 500 ft.
Bradley-Maneval Oil Co. No. 7, CWL NE NE sec. 20-46n-63w. R.O.G.
Federal Oil Co. No. 9, CNL SE SE sec. 15-46n-64w. R.O.G.
Chas. Goodell et al No. 1 State, C NE NE sec. 23-44n-63w. Rdy. to spd.
John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. Drlg. 1,924 ft.
Sisty et al No. 1 Carmine, SE SW sec. 31-44n-62w. S.D. 835 (C.D.) ft. until spring.
Le Faivre Oil Synd. No. 1 Martin, NW NW SW sec. 29-45n-68w. Drlg. 2,550 ft.; will U.R. 10-in. at 2,130 ft. for wtr. S.O.
Giles & Proutt No. 1 Govt., CEL SW NE sec. 29-45n-61w. S.D. 179 ft.
T. L. Hopkins No. 1, CNL NE NE sec. 36-47n-63w. Spd. and S.D.
Henry Egert No. 6, C NE SE sec. 8-46n-63w. Spd. and S.D.

## MONTANA

While the hearing being conducted by the Montana Oil Conservation Commission continues at Great Falls, developments of interest are taking place in other directions. The issues at that hearing have narrowed down largely to the question as to whether proration shall be introduced to stabilize conditions. This method of solving present problems is opposed by a strong group against proration and in favor of building up markets for the excess production.

For some time an organization called the Shelby Lions Club Committee on "Buy Gasoline Made From Montana Crude" has been active in its campaign. Drivers of cars are requested to sign pledges to buy only gasoline made from Montana crude. In some communities the citizens have signed almost 100 per cent. In others, good showings have been made. Farmers entering the cities and towns and tourists visiting the state are requested to attach their signatures to the pledges. Newspaper advertisements are being run listing refiners who run only Montana crude with brand names. Opposition to this campaign has developed in several quarters.

When Canadian exports began to drop and wells were shutting down, the independents began looking for other markets. About this time the interstate commerce commission ordered certain reductions in the freight rates on crude which was followed by plans of the Yale Petroleum Corp. to build a refinery at Kalispell and of the Wasatch Oil & Refining Co. to put up a plant at Pocatello, Idaho. Two of the buyers who formerly posted prices for Cut Bank and Kevin-Sunburst crude discontinued posting prices and a scramble started for contracts for output. Last week rumors were started by the appearance in those districts of several representatives of the Continental Oil Co. that this company planned a refinery in the area. It is operating a small plant at present at Lewistown on crude from Cat Creek. W. H. Ferguson, executive vice president of Continental, was not in the city this week and no confirmation or denial of the report could be obtained.

While these activities were in full swing another group organized the North Montana Petroleum Traffic Association at Shelby to go after better freight rates on the transportation of crude and refined products in efforts to further extend the markets. At Great Falls another organization, fostered by the chamber of commerce, was formed to carry on a campaign for Montana markets for Montana gasoline. This is, in effect, a statewide expansion of the Shelby Lions Club movement. Into the picture also has come several cooperative marketing movements. Representatives of major companies marketing gasoline in Montana from other states are keeping in close touch with the rather complicated developments.

**Big Horn County**

P. O. Oil & Gas Co. No. 1, NW NE NE sec. 25-9s-35e. S.D. 339 ft.
E. L. Dana No. 1 Hardy, SW NW sec. 22-9s-35e. S.D. 700 ft.

**Carbon County**

R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-10e. Cmtg. cave at 1,610 ft.
Miracle Oil Co. No. 2, CWL NE SE sec. 3-6s-23e. T.D. 1,905 ft.; U.R. to set 5⅛-in. at 1,700 ft.
Geo. Muth et al No. 1, CSL SE SE sec. 23-6s-23e. S.D. indef. at 1,500 ft.
Henderson Prod. Co. No. 1-H-11 Elk, 11, SE SE NW sec. 35-9s-23e. S.D. 1,626 ft. for 8¼-in.; top Frontier 1,608 ft.; small S.O.
Sha-Wa Pet. Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. Rng. 8⅝-in. cave string to 2,980 ft.

**Chotcau County**

Security Pet. Co. No. 1 Johnson, NE sec. 23-26n-2e. S.D. 1,609 ft. (C.D.) for winter.

**Cascade County**

C. Leonard Smith No. 1-A Smith-Schwingle, NE NE SW sec. 14-22n-2e. T.D. 750 ft.; fsg. tools.

**Daniels County**

White Tail O. & G. Co. No. 2 Wiley, NW NW NW sec. 10-36n-50e. Drlg. 1,675 ft. after rng. 10-in.

**Fergus County**

Baughman & Singely No. 1 Skaggs, C NW SW sec. 7-15n-20e. Drlg. 500 ft.
East Crest Oil Co. No. 1 Brakke, NW SE SW sec. 14-15n-19e. S.D. 640 ft.
White Top O. & G. Co. No. 1 Govt., C NE SW sec. 35-14n-19e. S.D. 1,450 ft.
Kalispel-Kevin Oil Co. No. 2 Emmons, C SW SE sec. 20-21n-18e. Drlg. 700 ft. in Eagle.

**Glacier County**

A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w, T.D. 2,592 ft.; S.D. until spring.
Jack Marshall No. 2 All.-119, SE SE NW sec. 1-32n-6w. Drlg. below 1,975 ft.

**Hill County**

W. E. Drought No. 1, C SW SE sec. 12-34n-17e. M.I. mach.

**Judith Basin County**

Fletcher E. Hunt No. 3, NW SE NE sec. 30-44n-15e. S.D. 1,760 ft.; C.D.

**Lewis and Clark County**

Lewis & Clark Oil Synd. No. 1 Lewis & Clark, NW NW SW sec. 11-18n-5w. Drlg. below 1,500 ft.

**Park County**

Ben W. Ryan et al No. 1 Burgess, SE SW NW sec. 28-2s-11e. S.D. 1,250 ft.

**Petroleum County**

O. B. Canfield No. 2 Govt., SE SE NE sec. 21-17n-24e. Drlg. 750 ft.; set 5⅛-in. for wtr. S.O.

## Toole County

Henry Vander Pas No. 1 Thompson, SE NW NW section 33-35n-3w, in the sweet oil district on the west side of the Kevin-Sunburst field, was completed in the Ellis at 1,700-07 feet for 150 bbls. per day on the pump. It had only a good show of oil before being acidized.

Big West Oil Co. No. 5 Gunderson, SW NE NW sec. 19-35n-2w. T.D. 1,641 ft.; contact 1,620 ft.; 600 ft. of oil; will test before acid.
West Kevin Community Lease, Inc., No. 1 McClary, SW NE NW sec. 3-34n-4w. T.D. 1,000 ft.; fsg.
Superior Pet. Co. No. 7 Govt., NE NW NW sec. 12-35n-3w. T.D. 1,130 ft. (C.D.); fsg.
R. G. Parrant No. 1 Anderson, C SW SE sec. 26-35n-4w. S.D. 90 ft.
E. O. Phelps No. 1 Govt., C NE SE sec. 25-36n-3w. S.D. 10 ft.; (formerly Guy Smith).
Couer d'Alene Oil Trust No. 2 Anderson, NE SW SW sec. 8-35n-1w. Drlg. 1,470 ft.
West Kevin Community Lease, Inc., No. 1 McClary, SE NE NW sec. 3-34n-4w. Drlg. 160 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE sec. 26-35n-4w. Spdg.
Big West Oil Co. No. 7 McDonald, NW NE NE sec. 19-35n-2w. S.D. 1,617 ft.
Welch Bros. No. 2 Ward, SW SE NE sec. 29-35n-3w. S.D. 1,655 ft.
Plotke & Rader No. 11 Fryberger, NW SE SE sec. 29-35n-3w. S.D. 1,698 ft.; S.O.
Hamilton & Hamilton No. 4 Reeg, SE SW SE sec. 14-35n-2w. S.D. 450 ft.
C. T. Oien No. 7 Engemoen, C NW NW sec. 14-35n-2w. T.D. 1,607 ft.; contact 1,591 ft.
E. O. Reichoff No. 3 Baum, SW SW SE sec. 3-35n-3w. S.D. 10 ft.
Bryant Bros. No. 1 Lashbaugh, NE SW NW sec. 34-25n-2w. T.D. 850 ft.; R.U. heavier mach. to resume.

**Outside Kevin-Sunburst**

Montana Gas Corp. No. 2 Clark, C SE SW sec. 24-37n-1w. T.D. 2,370 ft.; gas sd. at 2,103 ft.; wtr. at 2,330 ft.; rng. 5⅛-in.

**Yellowstone County**

Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. Top Dak. 1,800 ft.; rng. csg.
Broadview Dome Oil Co. No. 1, NE NE SW sec. 18-3n-23e. T.D. 4,147 ft.; drlg. on bridge at 2,700 ft.
Lauriel Oil Co. No. 1, C NW SW sec. 7-2s-24e. S.D. 200 ft.

## UTAH

**Daggett County**

Mountain Fuel Supply Co. No. 3-B Murphy, NW NW SW sec. 23-3n-24e. Cmtd. 13⅜-in. at 323 ft. and S.D. for winter.
Sormir Pet. Corp. No. 1 State, SE SE NW sec. 16-3n-24e. Loc.; to be drilled next spring.

**Grand County**

Colorado-Utah Explr. Co. No. 1 Leib-Govt., SW sec. 32-23n-21e. R.U.C.T.
Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. T.D. 6,715 ft.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. Drlg. 2,440 ft.
Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. Res. at 857 ft.

**Summit County**

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. T.D. 2,502 ft. in sh.; prep. to lower 6⅝-in. for wtr. S.O.

## NEBRASKA

**Keith County**

Twentieth Century Oil Co. No. 1 Stuken, C NW NW sec. 21-14n-37w. Drlg. 1,700 ft.

**Jefferson County**

L. R. Page et al No. 1 Bonham, C SE SE sec. 1-1n-1e. Drlg. Sil. L. 3,283 ft.; 6¼-in. at 3,197 ft.

**Dawes County**

Stephens Oil Corp. No. 1 Palmer, C NW SW sec. 1-33n-50w. Drlg. 3,005 ft. in Upper Morrison.

## NORTH DAKOTA

**Williams County**

California Co. No. 1 Kamp, C NW NE sec. 3-154n-96. Rmg. to set 9⅝-in. on bttm. at 6,747 ft.; will S.D. for winter.

## Central West Fields

*(Continued from Page 82)*

in Martin County, is at a total depth of 2,777 feet, and the crew was awaiting the arrival of men and material to shoot it.

Other reports from Martin County include three operations on the C. W. Preece land on Coldwater Fork. The Kentucky-West Virginia Gas Co. is down 1,350 feet in sand in No. 5232, is idle at No. 5236 and was drilling at 1,345 feet in No. 5235 in sand.

In Floyd County, Kentucky-West Virginia Gas Co. was drilling at 1,690 feet in Salt sand in No. 563 on H. H. Smith land near Mouth Camp Branch of Levisa Fork. The same company has reached the 1,495-foot level in No. 565 J. I. Stepp, nearby, and is idle at No. 567 on M. Slone and M. D. Slone land. The company is also rigging up No. 5233 on John W. Burchett land on Cow Creek.

In Lee County, Thomas Witmer was drilling at 320 feet in No. 8 on C. J. Tipton land on Billie's Fork in the Big Sinking district. Fleiger Oil Co. had reached the 715-foot level in No. 1 on the Andrew Combs land in the same district and McCown & Wissing were drilling at 825 feet in No. 9 on the same land.

## WESTERN KENTUCKY

OWENSBORO, Ky., Jan. 31.—Thirteen completions were reported from the Western Kentucky fields in the past week, including 7 oil wells, 2 gas wells and 4 dry holes. A 100-bbl. well in the Dundee district, McLean County, and a 75-bbl. well each in the Cleopatra and Island districts of the same county, were feature producers. Following are the completions, and the new operations started during the week:

### Breckinridge County

Cloverport district: Flescher, Galey and others No. 3 Murray Tile Co., deep test, drilling at 465 feet.

Van Zant district: Bryan & Patton No. 1 Stiley Howard, old dry hole, drilling deeper. Kelly & Murphy No. 2 H. C. Pate, 75,000 feet of gas, Jackson sand 451-62 feet; may drill deeper.

Tar Springs district: William Railins No. 1 Acos Brothers, deep test, drilling at 225 feet.

### Grayson County

Falls of Rough district: A. V. Smith and others No. 8 Greene Brothers, spudding in.

### Hancock County

Easton district: W. E. Hupp No. 4 Jethro Easton, 10 bbls., Jackson sand 564-572 feet; shot with 40 quarts; total depth 575½ feet. J. C. Ellis No. 10 W. C. Smith, 7 bbls. from Jett sand at 374-400 feet; shot with 120 quarts; total depth 400 feet.

Pellville district: W. W. Damron and others No. 2 Cicero Phillips, 170,000 feet of gas, Jackson sand 618-32 feet. C. D. Walker and others No. 6 Elmer Boling, drilling at 360 feet.

### McLean County

Cleopatra district: Hoosier Drilling Co. No. 3 Nannie Cook, estimated 75 bbls., Barlow sand 1,728-50 feet; shot with 60 quarts from 1,732-46 feet; total depth 1,750 feet.

Island district: South Penn Oil Co. No. 2 Alma Nall, 75 bbls. from 23 feet of Jett sand.

### Ohio County

Dundee district: New Deal Oil & Gas Co. No. 13 H. J. O'Dell heirs, 100 bbls., Jackson sand, 525-34 feet; shot with 40 quarts; total depth 536 feet.

Taffy district: Frank Randall and others No. 1 J. Funk, dry hole through Jett formation; no sand; total depth 687 feet. Frank Randall and others No. 1 Duke heirs, south tract, moving in.

Fordsville district: Cumberland Petroleum Co. and others No. 1 Joint Line, deep test, running 10-inch at 200 feet.

Adaburg district: Nollem Oil & Gas Co. No. 3 Vincent Crowe, 20 bbls., Jett sand, 620-35 feet; shot with 80 quarts at 620-32 feet; total depth 651 feet. Rex-Pyramid Oil Co. No. 16 J. Len Stinnett, 15 bbls., Stray sand, 597-615 feet; not shot; total depth 615 feet.

Lyonia district: H. A. Henry No. 5 Cora Chambers, old well drilling deeper.

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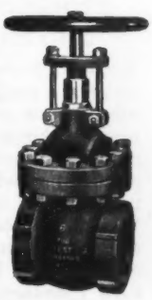

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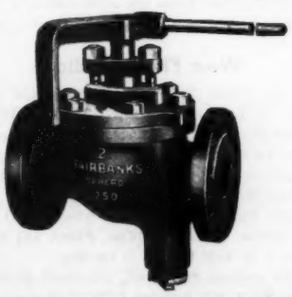

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# Canadian Fields

# Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Jan. 31.—In the southwest end of the Turner Valley west flank area in Alberta, Sunset Oils No. 1, LSD 10, section 20-18-2w5, bottoming at 7,475 feet with estimated potential of 1,000 bbls. a day, was given acid treatment. The well cleared itself without swabbing or bailing, putting on a spectacular performance with flames shooting 200 feet from the flare line. Flush production was estimated around 3,000 bbls. a day, with bottom-hole pressure of 3,000 pounds. After blowing some hours, it was connected with the separators for government test of potential.

Farther south, Firestone Petroleums No. 1, LSD 13, section 16-18-2w5, bottoming at 6,713 feet with official potential of 689 bbls., was acidized, developing a flush of 312 bbls. in six hours. A settled potential around 1,000 bbls. a day is expected.

In section 20-18-2w5, Royal Canadian Oils No. 1, LSD 15, bottoming at 7,416 feet with official potential of 920 bbls. after acidizing, is being given a second acid treatment.

In section 32-18-2w5, West Flank Oil Co. No. 2, N half LSD 1, completed in the lime at 6,287 feet, shows a settled potential around 500 bbls. a day.

### West Central Producer

In West Central Turner Valley, Brown Oil Corp. No. 3, LSD 15, section 19-19-2w5, was finished at 6,771 feet after getting the Madison limestone at 6,335 feet. Location is about 4 miles north of Royal Crest Petroleums No. 2, the nearest of the newer crude producers, and about a mile southwest of Dalhousie Oil Co. No. 8, which finished last year as a dry hole. After running 2½-inch tubing the well was swabbed. No production was obtained in the black lime, so the hole was plugged back about 90 feet and treated with acid. It flowed by heads for a short time, with some green crude, but failed to clear itself, and is being cleared by gas lift. It looks like a small crude producer.

### Tests in the Lime

In section 28-18-2w5, Richland Royalties No. 2, LSD 5, is below 6,725 feet after getting the Madison around 6,410 feet. It is expected to finish at about 6,875 feet, and has fair shows of gas and crude. Separators and tanks have been installed.

In section 20-18-2w5, Spy Hill Royalties No. 1, LSD 16, got the Madison limestone at 6,570 feet and is preparing to resume after cementing casing at 6,615 feet.

### Naphtha Wells Yield Crude

On the western fringe of the naphtha area in South Turner Valley, Sovereign Royalties No. 1, LSD 14, section 21-18-2w5, has dropped to 64.6 gravity, thus changing from the naphtha to crude oil category. At the same time production increased from 30 to around 50 bbls. While acidization is thought to have helped this process, the change from naphtha to crude has occurred in several of the older Turner Valley wells. In North Turner Valley, Model Oils No. 1, starting as a naphtha producer, very soon changed to crude, at the same time increasing its flow, and has been a steady crude producer for about seven years. In South Turner Valley, Advance Oil Co. No. 5-A and Miracle Oils No. 2 became crude producers before the recent discovery of crude production down the west flank. Operators anticipate that with the gradual withdrawal of gas, the process may become general; though in some of the older naphtha wells the opposite has been the case, the gas becoming drier with continued production.

### West Flank Drilling

In section 32-18-2w5, Royalite Oil Co. No. 28, LSD 16, is below 6,190 feet. Royalite No. 30, LSD 11, is below 849 feet. Davies Petroleums No. 4, LSD 10, has let contract and will start early in March, following completion of Davies' No. 1. West Turner Petroleums No. 2, LSD 2, is below 300 feet. West Flank Oil Co. No. 4, W half LSD 1, is rigging.

In section 28-18-2w5, Richland Royalties No. 1, NE quarter LSD 12, is preparing to resume from 4,058 feet, as soon as Richland No. 2 is finished. In section 29-18-2w5, Davies Petroleums No. 1, LSD 2, got the grit beds at 5,454 feet and is in the Upper Blairmore formation below 5,581 feet.

In section 20-18-2w5, Sunset Oils No. 2, LSD 7, offsetting No. 1 producer to the south, will be spudded before March 23. Acreage is subleased from Okalta Oils, Ltd. York Oils No. 1, LSD 2, a half mile south of Sunset No. 1 producer and a quarter mile west of United-Brown No. 5, is spudding below 100 feet.

In section 17-18-2w5, Sundance Royalties No. 1, LSD 9, is below 2,253 feet. Coronation Royalties No. 1, LSD 10, is below 1,819 feet.

In section 16-18-2w5, Frontier Royalties No. 1, LSD 11, is below 850 feet. Richwell Oil Co. No. 1, LSD 5, is running casing preparatory to resuming from 1,728 feet. Okalta Oils No. 7, LSD 3, has spudded. Okalta No. 8, LSD 6, is rigging.

In the far south, Davies Petroleums No. 3, LSD 7, section 33-17-2w5, is setting surface casing around 80 feet.

### Okalta Structure

On the Okalta fold, west of South Turner Valley, Okalta Oils No. 6, LSD 3, section 30-18-2w5, is rigging rotary outfit to resume from 3,805 feet, after setting 10¾-inch casing.

Scottish Petroleums No. 1, LSD 16, section 19-18-2w5, is preparing to resume after running 16-inch casing to 505 feet.

### North Turner Valley

In North Turner Valley, Royalite Oil Co. No. 29 Turner Basin, LSD 7, section 27-20-3w5, is below 6,360 feet after getting the Madison limestone at 6,275 feet.

### New Tests Planned

In section 16-18-2w5, South Turner Valley, Royal Canadian Oil Co. No. 2, LSD 4, is working on cellar. Location extends the drilling area a quarter mile to the south and west.

It is reported that Royalite Oil Co. is arranging to start its No. 31 test on Hudson's Bay Co. acreage in section 8-18-2w5, west of National Petroleum Corp. No. 2.

### South Extension Prospects

The area of proven crude production on the Turner Valley west flank extends for approximately 3½ miles north and south and drilling is under way 3½ miles south of the southernmost producer, with good prospects of extending the proven field that far. Extensive leasing in the last few weeks indicates that systematic efforts will be made this year to test the potentialities still farther south. A syndicate representing eastern interests including C. P. Riel and Nesbitt Thomson has secured over 6,000 acres in Townships 16, 15, 14 and 13, 2w5, including lands held by O. B. Stockford and George W. Jackson. Agreements call for the drilling of several wells this year. Another eastern syndicate has taken up acreage held by Calgary interests in the Chain Lake area still farther east, the holdings extending into Township 13. Acreage has also been taken up by Advance Oil Co., McDougall-Segur Exploration Co. and Alberta Pacific Consolidated Oils, Ltd. Townships 15 and 16, Range 2w5, have been completely blanketed, and the major portion of Townships 13 and 14. P. J. Harvey of Vancouver, British Columbia, has secured acreage in Townships 13, 14 and 15, Ranges 2 and 3. Two Valley Oils, Ltd., of Calgary is arranging for a test in Township 15-2w5, to spud before August 1. This southern leasing extends for more than 24 miles south of Davies Petroleums No. 3, the southernmost drilling test in Turner Valley, and more than 27 miles south of the nearest crude producer, and is in fairly direct line with the west flank crude area. The acreage under lease is practically untested, most of the drilling in the foothills south of Turner Valley having been farther to the west.

### East Side Drilling

On the Calling Valley structure east of Turner Valley, Sentinel Oil Co. No. 1, LSD 1, section 8-20-2w5, is below 6,445 feet.

### Tests in the Foothills

On the Brazeau structure, in the northern foothills west of Edmonton, Home Oil Co. No. 1, LSD 16, section 7-43-17w5, is preparing to resume after cementing 18-inch casing at 400 feet.

On the Kootenay dome, Roxana Petroleums No. 1, section 8-24-7w5, will resume from 3,790 feet early in February. The hole is 685 feet in the Devonian limestone with some gas production, and is expected to get commercial production in the Lower Devonian.

On the Birch Ridge structure, Elbow Oils No. 1, LSD 11, section 35-22-5w5, has cemented 6⅝-inch casing at 5,314 feet preparatory to testing production in the brown sand of the Dalhousie formation.

On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, section 34-17-3w5, is in the poker chip shales around 5,292 feet and expected to get the Madison limestone above 5,400 feet. It is planned to cement 6-inch casing on top of the lime before drilling into production. In the last 1,000 feet the hole has logged closely with Prairie Royalties No. 1 in South Turner Valley.

### Pouce Coupe Prospect

Guardian Oil Co. and associated interests are arranging for a deep test on the Pouce Coupe structure, close to the British Columbia boundary and west of the Peace River area. Tentative location has been made in section 13-80-13w6.

### Border Fields

In the Taber field, Southern Alberta Plains Petroleum Corp. No. 3, section 25-9-17w4, is sidetracking a piece of lost liner before deepening into production from 3,205 feet. Plains No. 2, LSD 11, same section, is being put into steady production, and will start refinery shipments next month. Rig from Plains No. 1, recently plugged and abandoned, is being moved to a new location for No. 4.

On the Rogers-Imperial structure, Range Oil & Gas Co. No. 3, LSD 15, section 20-1-11w4, is below 1,500 feet.

### Battleview Oil Show

In east-central Alberta, Pacalta Oils No. 1, LSD 3, section 5-48-5w4, on the Battleview anticline, has cored 5 feet of oil sand at 2,053 feet. The hole has been reamed and is setting casing before testing for production.

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# WILDCAT OPERATIONS

## CALIFORNIA

### IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

| Company, well, location and county— | S.T.R. | Depth | Status |
|---|---|---|---|
| Wilshire Oil, No. 1 Gaviota, Santa Barbara | 35- 5-33 | 922 | sd. sh. drlg. |
| Hancock-Bush, No. 2-W Santa Maria, Santa Barbara | 30-10-33 | 2,336 | sd. sh. drlg. |
| Hancock-Bush, No. 2-C.L. Santa Maria, Santa Barbara | 30-10-33 | 4,312 | rig. to pump |
| Hancock-Bush, No. 2-R Santa Maria, Santa Barbara | 25-10-34 | 2,138 | sd. sh. drlg. |
| Anderson, Jos., No. 1 A. & T., Santa Maria, S. Barbara | 28-10-34 | 1,630 | sd. sh. drlg. |
| Ohio Oil, No. 3-M Santa Maria, Santa Barbara | 21-10-34 | 4,259 | pump. 297 b.d. |
| Edco Oil, No. 1 Santa Maria, Santa Barbara | 27-10-34 | 3,695 | sd. sh. drlg. |
| Pet. Prop., Inc., No. 1-B Santa Maria, Santa Barbara | 19-10-33 | 2,200 | pump. water |
| De Laine Pet., No. 3-M Santa Maria, Santa Barbara | 27-10-34 | 3,171 | sd. sh. drlg. |
| Cal. Lands, Inc., No. 2 Santa Maria, Santa Barbara | 26-10-34 | 5,200 | br. sh. drlg. |
| Moore, E. H., No. 13-E Sugar, Santa Maria, S. Barbara | 24-10-35 | 4,096 | sd. sh. drlg. |
| Moore, E. H., No. 1-G Sugar, Santa Maria, S. Barbara | 19-10-34 | 4,540 | sd. sh. drlg. |
| Pet. Sec., No. 1-R Santa Maria, Santa Barbara | 35-10-34 | 5,435 | pump. 700 b.d. |
| Signal Oil, No. 1 Romalho, Santa Maria, S. Barbara | 27-10-34 | 4,622 | flow. 1,270 b.d. |
| Signal Oil, No. 2 Romalho, Santa Maria, S. Barbara | 27-10-34 | 2,381 | sd. sh. drlg. |
| Union Oil, No. 2-V, Santa Maria, Santa Barbara | 21-10-34 | 611 | sd. sh. drlg. |
| Union Oil, No. 3 Mor., Santa Maria, Santa Barbara | 24-10-34 | 2,781 | sd. sh. drlg. |
| Union Oil, No. 2-B Santa Maria, Santa Barbara | 24-10-34 | 2,185 | sd. sh. drlg. |
| Union Oil, No. 1 Wheat, Santa Maria, Santa Barbara | 22-10-34 | 2,543 | sd. sh. drlg. |
| Union Oil, No. 17 Cal. Coast, Orcutt, Santa Barbara | 26- 9-34 | 4,515 | looks wet |
| Union Oil, No. 20 Squires, Orcutt, Santa Barbara | 27- 9-34 | 3,360 | sd. sh. drlg. |
| Cole, F. E., No. 16 Santa Maria, Santa Barbara | 23-10-34 | 3,315 | bailing |
| Jones, F. E., No. 1-W, Santa Maria, Santa Barbara | 27-10-34 | 1,931 | sd. sh. drlg. |
| Pac. West Oil, No. 2-S, Santa Maria, Santa Barbara | 27-10-34 | 4,581 | sd. sh. drlg. |
| Pac. West Oil, No. 3-D, Santa Maria, Santa Barbara | 27-10-34 | 3,092 | sd. sh. drlg. |
| Pima Drlg., No. 1 Morganti, Casmalia, Santa Barbara | 13- 9-35 | 1,800 | br. sh. drlg. |
| Standard Oil, No. 1 Cat Canyon, Santa Barbara | 27- 9-33 | 3,864 | hd. sh. drlg. |
| Tweedy, A. E., No. 1 Penn, Capitan, Santa Barbara | 34- 5-31 | 1,610 | idle |
| Texas Co., No. 134 Shiells, Shiells Canyon, Ventura | 4- 3-19 | 4,480 | P.B. 3,814 |
| High Mesa Oil, No. 1 Butcher, Ojai, Ventura | 16- 4-22 | 1,325 | hd. sd. drlg. |
| Texas Co., No. 5 Yale, South Mountain, Ventura | 13- 3-21 | 1,746 | sd. sh. drlg. |
| Richfield Oil, No. 1 McFarland, Camarillo, Ventura | 13- 2-21 | 7,883 | fish. D.P. |
| Texas Co., No 1 Edwards, Camarillo, Ventura | 19- 2-21 | 6,020 | hd. sh. drlg. |
| Trucano, G., No. 1 Simi, Ventura | 5- 2-17 | 1,001 | gr. sh. drlg. |
| Stalling & Senter, No. 1 Timber Canyon, Ventura | 24- 4-21 | 576 | O.S. drlg. |
| Section 20 Oil, No. 1 Sespe, Ventura | 20- 5-19 | 1,200 | hd. sh. drlg. |
| Garmack Oil, No. 1 Orcutt, Sespe, Ventura | 28- 5-19 | 503 | br. sh. drlg. |
| Condor Oil, No. 1 Dorman, Sespe, Ventura | 6- 4-19 | 2,193 | fish. bailer |
| Skyline Oil, No. 1-H Hopper Canyon, Ventura | 13- 4-19 | 2,753 | sd. sh. drlg. |
| Commander Oil, No. 6-F Hopper Canyon, Ventura | 13- 4-19 | 2,027 | pump. 60 b.d. |
| Continental Oil, No 8-A Grubb, S. Miguelito, Ventura | 24- 3-24 | 6,700 | O.S. drlg. |
| C. C. M. Oil, No. 11 Rincon, Ventura | 17- 3-24 | 4,057 | recmtd. 3,727 |
| C. C. M. Oil, No. 20 Rincon, Ventura | 8- 3-24 | 1,873 | sd. sh. drlg. |
| Richfield Oil, No. 1 State, Rincon, Ventura | 17- 3-24 | 4,281 | redrlg. 2,580 |
| Rowe, W. G., No. 1 Johnson, Oxnard, Ventura | 15- 1-22 | 3,173 | sd. sh. drlg. |
| Tide Water A. O., No. 19 V.L.W., Ventura, Ventura | 26- 3-23 | 5,595 | sd. sh. drlg. |
| Tide Water A. O., No. 41 V.L.W., Ventura, Ventura | 24- 3-23 | 4,260 | sd. sh. drlg. |
| Tide Water A. O., No 69 Lloyd, Ventura, Ventura | 27- 3-23 | 5,690 | sd. sh. drlg. |
| Tide Water A. O., No. 79 Lloyd, Ventura, Ventura | 27- 3-23 | 3,780 | sd. sh. drlg. |
| Tide Water A. O., No. 135 Lloyd, Ventura, Ventura | 27- 3-23 | 9,151 | hd. sh. drlg. |
| Tide Water A. O., No. 138 Lloyd, Ventura, Ventura | 23- 3-23 | 7,970 | hd. sd. drlg. |
| Tide Water A. O., No. 18 Hartman, Ventura, Ventura | 22- 3-23 | 9,865 | sd. sh. drlg. |
| Shell Oil, No. 93 Taylor, Ventura Ave., Ventura | 30- 3-23 | 4,780 | sd. sh. drlg. |
| General Pet., No. 13 Notten, Ventura Ave., Ventura | 28- 3-23 | 9,871 | tested wet |
| Amerada Pet., No. 5 Beer, Devils Den, Kern | 22-26-19 | 6,594 | br. sh. drlg. |
| Rocima Oil, No. 1 Laymance, McKittrick, Kern | 20-30-22 | 2,874 | sd. sh. drlg. |
| Standard Oil, No. 2 Randolph, Semi-Tropic, Kern | 14-27-23 | 9,100 | sd. sh. drlg. |
| Continental Oil, No. 2 KCL, Wasco, Kern | 8-27-24 | 12,720 | sd. sh. drlg. |
| Chico-Martinez Oil, No. 1 South Belridge, Kern | 1-29-20 | 996 | gr. sh. drlg. |
| Belridge Oil, No. 27-7 North Belridge, Kern | 27-27-20 | 6,360 | br. sh. drlg. |
| Belridge Oil, No. 27-8 North Belridge, Kern | 27-27-20 | 8,021 | br. sh. drlg. |
| Belridge Oil, No. 27-61 North Belridge, Kern | 27-27-20 | 8,715 | br. sh. drlg. |
| Belridge Oil, No. 28-1 North Belridge, Kern | 28-27-20 | 8,000 | cmtd. 8,000 |
| Tide Water A. O., No. 7 Reward, North Belridge, Kern | 34-27-20 | 7,873 | br. sh. drlg. |
| Tide Water A. O., No. 1-21 North Belridge, Kern | 21-27-20 | 7,201 | cleaning out |
| Tide Water A. O., No. 2-21 North Belridge, Kern | 21-27-20 | 7,098 | br. sh. drlg. |
| Richfield Oil, No. 1-A North Belridge, Kern | 22-27-20 | 5,461 | br. sh. drlg. |
| Texas Co., No. 2 Martin, North Belridge, Kern | 22-27-20 | 8,010 | br. sh. drlg. |
| Texas Co., No. 3 Martin, North Belridge, Kern | 22-27-20 | 4,174 | br. sh. drlg. |
| General Pet., No. 1 St. Helens, Belridge, Kern | 12-28-20 | 6,491 | sd. sh. drlg. |
| Eastmont Oil, No. 5 Olcese, Round Mountain, Kern | 16-28-29 | 1,755 | pump. 251 b.d. |
| Tampico Pet., No. 5 B. & G., Round Mountain, Kern | 17-28-29 | 1,822 | sd. sh. drlg. |
| Richfield Oil, No. 1 Olcese, Round Mountain, Kern | 17-28-29 | 1,591 | fish. D.P. |
| Shell Oil, No. 2 Olcese, Round Mountain, Kern | 21-28-29 | 1,905 | P.B. 1,597 |
| Pet. Sec., No. 6 Coffee, Round Mountain, Kern | 1-28-28 | 2,098 | dry; abd. |
| Long, Harry, No. 1 Coffee, Round Mountain, Kern | 2-28-28 | 1,960 | dry; abd. |
| Vedder, D. G., No. 5 Bell, Round Mountain, Kern | 12-28-28 | 1,853 | pump. 380 b.d. |
| Marcan Oil, No. 3 C.Y., Round Mountain, Kern Co. | 12-28-28 | 2,058 | rig. to pump |
| California Star Oil, No. 3-80 Kern Front, Kern | 22-28-27 | 2,755 | cleaning out |
| Kern River Oilfields, No. 25-4-B Kern Front, Kern | 25-28-27 | 2,043 | pump. 90 b.d. |
| Rubenstein, A. B., No. 1 Kern Front, Kern | 20-28-27 | 3,125 | sd. sh. drlg. |
| Carter, J. P., No. 2 S.P.L., Mount Poso, Kern | 3-27-28 | 1,281 | sd. sh. drlg. |
| Pebble Beach Oil, No. 6 Newhope, Mount Poso, Kern | 29-27-27 | 2,653 | fish. bailer |
| Shell Oil, No. 1 Keystone, Deep Well Ranch, Kern | 4-26-27 | 3,730 | sd. sh. drlg. |
| Western Gulf Oil, No. 31-B KCL, Fruitvale, Kern | 14-29-27 | 3,013 | sd. sh. drlg. |
| Western Gulf Oil, No. 32-B KCL, Fruitvale, Kern | 14-29-27 | 2,487 | sd. sh. drlg. |
| Cal-West. Oil, No. 1 KCL, Fruitvale, Kern | 14-29-27 | 3,480 | sd. sh. drlg. |
| Pacific O. & G., No. 1-F Fruitvale, Kern | 14-29-27 | 3,017 | pump. 120 b.d. |
| Texas Co., No. 1 Bastain, Mountain View, Kern | 34-30-29 | 4,030 | sd. sh. drlg. |
| Hogan Pet., No. 5 Symons, Mountain View, Kern | 4-31-29 | 6,172 | cmtd. 6,012 |
| Superior Oil, No. 1 Wagner, Rio Bravo, Kern | 35-28-25 | 9,160 | br. sh. drlg. |
| Superior Oil, No. 1 Geissinger, Rio Bravo, Kern | 32-28-25 | 7,280 | sd. sh. dr' |
| Superior Oil, No. 1 Ruhl, Rio Bravo, Kern | 1-29-25 | 3,176 | sd. sh. drlg. |
| Union Oil, No. 2-34 KCL, Rio Bravo, Kern | 34-28-25 | 8,997 | sd. sh. drlg. |
| Getty Oil, No. 1 Ramsey, Rio Bravo, Kern | 35-28-25 | 2,387 | sd. sh. drlg. |
| General Pet., No. 1 Wagner, Rio Bravo, Kern | 35-28-25 | 176 | sd. sh. drlg. |
| Shell Oil, No. 58-A KCL, Bellevue, Kern | 29-29-27 | 1,981 | sd. sh. drlg. |
| Superior Oil, No. 9 KCL, Greeley, Kern | 3-30-26 | 7,870 | squeeze job |
| Standard Oil, No. 1 Calder Klassen, Greeley, Kern | 20-29-26 | 4,698 | sd. sh. drlg. |
| Standard Oil, No. 11-2 KCL, Greeley, Kern | 20-29-26 | 9,185 | sd. sh. drlg. |
| Standard Oil, No. 11-12 KCL, Greeley, Kern | 20-29-26 | 7,902 | redrlg. 5,110 |
| Standard Oil, No. 12-4 KCL, Greeley, Kern | 16-29-26 | 4,381 | sd. sh. drlg. |
| Standard Oil, No. 15-1 KCL, Ten Section, Kern | 27-30-26 | 8,072 | flow. 750 b.d. |
| Shell Oil, No. 32-29-A KCL, Ten Section, Kern | 29-30-26 | 8,301 | P.B. 8,135 |
| Shell Oil, No. 85-25-B KCL, Ten Section, Kern | 25-30-26 | 7,896 | sd. sh. drlg. |
| Shell Oil, No. 41-32-B KCL, Ten Section, Kern | 32-30-26 | 2,697 | sd. sh. drlg. |
| Shell Oil, No. 52-31-B KCL, Ten Section, Kern | 31-30-26 | 7,480 | sd. sh. drlg. |
| Shell Oil, No. 27-30-B KCL, Ten Section, Kern | 30-30-26 | 8,200 | flow. 2,592 b.d. |
| Shell Oil, No. 72-14-A KCL, Canal, Kern | 14-30-25 | 8,036 | fish. D.P. |
| Ohio Oil, No. 4-E KCL, Canal, Kern | 13-30-25 | 7,993 | sd. sh. drlg. |
| Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern | 32-31-26 | 4,170 | sd. sh. drlg. |
| Merritt-Annex Oil, No. 7 Midway-Sunset, Kern | 25-12-24 | 3,420 | hd. sd. drlg. |
| Pattiway Oil, No. 4 Midway-Sunset, Kern | 12-11-24 | 1,662 | pump. 35 b.d. |
| Hoyt, Otis, No. 8 Midway-Sunset, Kern | 7-11-23 | 1,588 | flow. 75 b.d. |
| Iriquois Oil, No. 2 Midway-Sunset, Kern | 7-11-23 | 1,800 | bailing |
| Chemeketa Oil, No. 1 Midway-Sunset, Kern | 15-32-23 | 2,407 | P.B. 2,353 |
| Victor Oil, No. 14 Midway-Sunset, Kern | 35-32-23 | 2,274 | O.S. drlg. |
| National Oil, No. 17 Midway-Sunset, Kern | 35-32-23 | 1,136 | sd. sh. drlg. |
| Texas Co., No. 1 Pioneer, Midway-Sunset, Kern | 33-11-23 | 6,690 | gr. sd. drlg. |
| Texas Co., No. 30 Midway-Sunset, Kern | 32-32-24 | 3,245 | rig. to pump |
| Richfield Oil, No. 1-D-A, Elk Hills, Kern | 1-31-24 | 2,953 | sd. sh. drlg. |
| Standard Oil, No. 2-14-A Tupman, Elk Hills, Kern | 36-30-24 | 2,990 | sd. sh. drlg. |
| Ohio Oil, No. 2-D Tejon, Kern | 23-11-19 | 5,896 | dry; abd. |
| Petrol Corp., No. 1 Tejon, Kern | 32-11-19 | 3,410 | sd. sh. drlg. |
| Honolulu Oil, No. 33-1 SP, Tejon, Kern | 33-12-19 | 6,430 | sd. sh. drlg. |
| Universal Consd., No. 1 Tejon, Kern | 33-11-19 | 4,500 | deepening |
| Shell Oil, No. 4-26 KCL, San Emidio, Kern | 26-11-22 | 6,270 | sd. sh. drlg. |
| Pure Oil, No. 1 Cantua, Fresno | 31-18-17 | 10,330 | hd. sh. drlg. |
| Union Oil, No. 1 Nicholson, Cantua, Fresno | 17-15-15 | 6,398 | sd. sh. drlg. |
| West Gulf. Oil, No. 4 S.P.L., Cantua, Fresno | 3-17-15 | 6,180 | sd. sh. drlg. |
| Superior Oil, No. 1 C.U.P., Fresno | 20-16-13 | 3,190 | sd. sh. drlg. |
| Dauphin Dev., No. 1 Alcade, Fresno | 30-21-14 | 3,651 | sd. sh. drlg. |
| Jacalitos Oil, No. 1 Jacalitos, Fresno | 14-21-15 | 5,798 | idle |
| Pet. Sec., No. 2 Gatchell, Jacalitos, Fresno | 18-20-16 | 4,698 | sd. sh. drlg. |
| Grimes, F. C., No. 1 Coalinga, Fresno | 12-20-15 | 548 | idle |

### KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

| | | | |
|---|---|---|---|
| Central Valley Oil, No. 1 Joaquin, Fresno | 1-12-20 | 477 | gr. sd. drlg. |
| K. N. D. A., No. 4-18-J Kettleman North, Fresno | 18-21-17 | 10,810 | cleaning out |
| K. N. D. A., No. 67-20-J Kettleman North, Fresno | 20-21-17 | 8,807 | reaming |
| K. N. D. A., No. 72-4-P Kettleman North, Fresno | 4-22-17 | 6,671 | br. sh. drlg. |
| K. N. D. A., No. 83-4-P Kettleman North, Fresno | 4-22-17 | 8,500 | flow, 3,595 b.d. |
| K. N. D. A., No. 38-12-P Kettleman North, Kings | 12-22-17 | 8,080 | C.P. 7,575 |
| K. N. D. A., No. 6-6-Q Kettleman North, Kings | 6-22-18 | 8,890 | P.B. 8,189 |
| K. N. D. A., No. 27-6-Q Kettleman North, Kings | 6-22-18 | 9,065 | P.B. 8,190 |
| K. N. D. A., No. 6-8-Q Kettleman North, Kings | 8-22-18 | 1,994 | sd. sh. drlg. |
| Standard Oil, No. 27-21-J Kettleman North, Fresno | 21-21-17 | 9,660 | hd. sd. drlg. |
| Standard Oil, No. 2-11-P Kettleman North, Kings | 11-22-17 | 7,850 | recmtd. 7,695 |
| Standard Oil, No. 76-1-P Kettleman North, Kings | 1-22-17 | 8,474 | hd. sd. drlg. |
| Standard Oil, No. 87-1-P Kettleman North, Kings | 1-22-17 | 1,998 | sd. sh. drlg. |
| Standard Oil, No. 21-13-P Kettleman North, Kings | 13-22-17 | 6,698 | br. sh. drlg. |
| Standard Oil, No. 41-7-Q Kettleman North, Kings | 7-22-18 | 5,570 | sd. sh. drlg. |
| Superior Oil, No. 5 Huffman, Kettleman No., Fresno | 29-21-17 | 10,475 | redrlg. 10,420 |
| Union Oil, No. 1 King, Kettleman North, Fresno | 29-21-17 | 8,310 | flow. 320 b.d. |
| Bandini Pet., No. 5 Whepley, Kettleman No., Fresno | 35-21-17 | 9,105 | sd. sh. drlg. |
| Friend, C. C., No. 1 Tulare Lake, Kings | 17-22-19 | 433 | sd. sh. drlg. |
| Amerada Pet., No. 1 Carano, Los Banos, Merced | 19-10-11 | 8,096 | gr. sd. drlg. |
| Standard Oil, No. 2 Weyl, McDonald Is., San Joaquin | 25- 2-4 | 7,775 | gr. sd. drlg. |
| Standard Oil, No. 1 Morris, Delano, Tulare | 36-24-23 | 11,460 | fish. D.P. |
| Wilshire Oil, No. 1 Half Moon Bay, San Mateo | 20- 6-5 | 6,960 | sd. sh. drlg. |
| Ohio Oil, No. 1 Willard Willows, Glenn | 18-20-2 | 4,505 | blow. gas |
| Amerada Pet., No. 1 McCormick, Rio Vista, Solano | 1- 3-2 | 1,387 | sd. sh. drlg. |

**IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS**

| Company, well, location and county— | S.T.R. | Depth | Status |
|---|---|---|---|
| Richfield Oil, No. 1-H El Segundo, Los Angeles | 18- 3-14 | 7,643 | will P.B. |
| Apex Pet., No. 1-C El Segundo, Los Angeles | 12- 3-15 | 6,890 | sd. sh. drlg. |
| Sovereign Oil, No. 1 El Segundo, Los Angeles | 12- 3-15 | 1,894 | sd. sh. drlg. |
| Termo Co., No. 2 El Segundo, Los Angeles | 12- 3-15 | 6,577 | sd. sh. drlg. |
| Ohio Oil, No. 11 Gough, El Segundo, Los Angeles | 7- 3-14 | 5,485 | sd. sh. drlg. |
| Texas Co., No. 6 Security, El Segundo, Los Angeles | 18- 3-14 | 7,315 | sd. sh. drlg. |
| Standard Oil, No. 7 Ref., El Segundo, Los Angeles | 13- 3-15 | 7,230 | tested wet |
| Standard Oil, No. 8 Ref., El Segundo, Los Angeles | 13- 3-15 | 6,589 | sd. sh. drlg. |
| Howard Oil, No. 1 El Segundo, Los Angeles | 12- 3-15 | 7,628 | dry; abd. |
| Lakeside Oil, No. 16-1 Elsie, El Segundo, Los Angeles | 12- 3-15 | 7,400 | testing |
| Wilshire Oil, No. 1 Const., El Segundo, Los Angeles | 12- 3-15 | 6,475 | sd. sh. drlg. |
| Wilshire Oil, No. 2-1 Elsie, El Segundo, Los Angeles | 12- 3-15 | 7,250 | sd. sh. drlg. |
| Wilshire Oil, No. 2 Sec., El Segundo, Los Angeles | 12- 3-15 | 7,205 | sd. sh. drlg. |
| Union Oil, No. 16-D. R., Playa Del Rey, Los Angeles | 28- 2-15 | 6,099 | redrlg. 5,829 |
| Standard Oil, No. 84 LAI Inglewood, Los Angeles | 17- 2-14 | 4,175 | P.B. 3,368 |
| Patton, C. B., No. 2 Torrance, Los Angeles | 14- 4-14 | 3,747 | redrlg. 3,624 |
| Anderson, N. H., No. 2 Torrance, Los Angeles | 14- 4-14 | 3,840 | redrlg. 3,658 |
| Anderson, N. H., No. 4 Torrance, Los Angeles | 14- 4-14 | 3,780 | will deepen |
| Peyton, D. F., No. 1 Torrance, Los Angeles | 23- 4-14 | 3,800 | cleaning out |
| Woolner Oil, No. 5 Torrance, Los Angeles | 14- 4-14 | 3,730 | cleaning out |
| Richfield Oil, No. 6-L Torrance, Los Angeles | 22- 4-14 | 3,792 | milling |
| Albertson Oil, No. 1-P Torrance, Los Angeles | 16- 4-14 | 4,440 | sd. sh. drlg. |
| Grubb, E. H., No. 2 Torrance, Los Angeles | 14- 4-14 | 3,701 | redrlg. 3,642 |
| Kelly, F. C., No. 1 fee, Torrance, Los Angeles | 16- 4-14 | 4,432 | sd. sh. drlg. |
| Jameson Oil, No. 1 Wash, Torrance, Los Angeles | 16- 4-14 | 4,035 | sd. sh. drlg. |
| Rolling Hills Pet., No. 1 Palos Verdes, Los Angeles | 27- 4-14 | 3,251 | sd. sh. drlg. |
| Tide Water A. O., No. 15 D. F. Dominguez, L. Angeles | 34- 3-13 | 4,365 | pump. 385 b.d. |
| Shell Oil, No. 18 Reyes, Dominguez, Los Angeles | 33- 3-13 | 4,105 | C.P. 3,963 |
| Shell Oil, No. 93 Reyes, Dominguez, Los Angeles | 33- 3-13 | 6,584 | sd. sh. drlg. |
| Union Oil, No. 49 Hellman, Dominguez, Los Angeles | 33- 3-13 | 6,681 | sd. sh. drlg. |
| Union Oil, No. 57 Callender, Dominguez, Los Angeles | 33- 3-13 | 7,790 | pump. 250 b.d. |
| Union Oil, No. 58 Callender, Dominguez, Los Angeles | 33- 3-13 | 3,980 | sd. sh. drlg. |
| Union Oil, No. 59 Callender, Dominguez, Los Angeles | 33- 3-13 | 2,168 | sd. sh. drlg. |
| Selbar Oil, No. 1 Harris, Dominguez, Los Angeles | 33- 3-13 | 4,388 | testing |
| Barnsdall Oil, No. 19 O'Dea, Rosecrans, Los Angeles | 18- 3-13 | 7,590 | O.S. drlg. |
| Union Oil, No. 35 H. P. Rosecrans, Los Angeles | 18- 3-13 | 10,397 | P.B. 4,940 |
| Union Oil, No. 18-R, Rosecrans, Los Angeles | 18- 3-13 | 5,891 | sd. sh. drlg. |
| Texas Co., No. 5-1 Gardena, Los Angeles | 30- 3-13 | 6,660 | sd. sh. drlg. |
| Barnsdall Oil, No. 2-S.F., Newhall, Los Angeles | 26- 4-17 | 6,680 | O.S. drlg. |
| Towsley Canyon Oil, No. 1 Newhall, Los Angeles | 8- 3-16 | 4,274 | cmtd. 4,005 |
| Royal Lands, No. 1 Ramona, Castaic, Los Angeles | 8- 4-17 | 366 | cleaning out |
| General Pet., No. 2 Blinn, Wilmington, Los Angeles | 3- 4-13 | 1,743 | sd. sh. drlg. |
| General Pet., No. 1 Harbor, Wilmington, Los Angeles | 3- 5-13 | 3,939 | completing |
| General Pet., No. 6 Harbor, Wilmington, Los Angeles | 2- 5-13 | 4,049 | P.B. 3,890 |
| General Pet., No. 7 Harbor, Wilmington, Los Angeles | 2- 5-13 | 1,963 | sd. sh. drlg. |
| General Pet., No. 2-S.P., Wilmington, Los Angeles | 2- 5-13 | 4,146 | O.S. drlg. |
| Allied Pet., No. 23 Wilmington, Los Angeles | 32- 4-13 | 2,990 | flow. 290 b.d. |
| Aillied Pet., No. 24 Wilmington, Los Angeles | 32- 4-13 | 1,875 | sd. sh. drlg. |
| Bankline Oil, No. 4-C.Y., Wilmington, Los Angeles | 34- 4-13 | 3,468 | pump. 180 b.d. |
| Bankline Oil, No. 2-U.P., Wilmington, Los Angeles | 3- 5-13 | 3,900 | sd. sh. drlg. |
| Bankline Oil, No. 4-U.P., Wilmington, Los Angeles | 3- 5-13 | 2,141 | sd. sh. drlg. |
| Baker Oil, No. 1 Wilmington, Los Angeles | 35- 4-13 | 3,078 | cmtd. 3,077 |
| Black Gold, No. 5 Wilmington, Los Angeles | 32- 4-13 | 3,530 | pump. 340 b.d |
| Black Gold, No. 7 Wilmington, Los Angeles | 32- 4-13 | 3,475 | O.S. drlg. |
| Caminol Co., No. 1-6-H Wilmington, Los Angeles | 2- 5-13 | 2,625 | sd. sh. drlg. |
| Colter & McAdoo, No. 4 Wilmington, Los Angeles | 32- 4-13 | 2,950 | sd. sh. drlg. |
| Hancock Oil, No. 1-A Wilmington, Los Angeles | 2- 5-13 | 3,455 | O.S. drlg. |
| Hancock Oil, No. 2-A Wilmington, Los Angeles | 2- 5-13 | 1,991 | sd. sh. drlg. |
| Lokern Dev., No. 1-B Wilmington, Los Angeles | 33- 4-13 | 3,518 | flow. 120 b.d. |
| L. B. Harbor Oil, No. 1-CC, Wilmington, Los Angeles | 2- 5-13 | 2,474 | sd. sh. drlg. |
| Macson Oil, No. 2-C Wilmington, Los Angeles | 32- 4-13 | 3,638 | swabbing |
| Pongratz, Gus, No. 1-G Wilmington, Los Angeles | 32- 4-13 | 3,674 | flow. 440 b.d. |
| Pongratz, Gus, No. 1-A Wilmington, Los Angeles | 32- 4-13 | 3,666 | O.S. drlg. |
| Richfield Oil, No. 1-G Wilmington, Los Angeles | 2- 5-13 | 3,045 | sd. sh. drlg. |
| Richfield Oil, No. 1-R.G., Wilmington, Los Angeles | 35- 4-13 | 3,350 | O.S. drlg. |
| Richfield Oil, No. 2-P.G., Wilmington, Los Angeles | 2- 5-13 | 2,387 | sd. sh. drlg. |
| Richfield Oil, No. 1-S.D., Wilmington, Los Angeles | 2- 5-13 | 1,995 | sd. sh. drlg. |
| Selegna Drlg., No. 14 Wilmington, Los Angeles | 33- 4-13 | 3,586 | pump 135 b.d. |
| Superior Oil, No. 1-S.C., Wilmington, Los Angeles | 4- 5-13 | 3,000 | sd. sh. drlg. |
| Superior Oil, No. 1-C Wilmington, Los Angeles | 2- 5-13 | 3,890 | flow. 3,500 b.d. |
| Superior Oil, No. 1-B.B., Wilmington, Los Angeles | 4- 5-13 | 2,146 | sd. sh. drlg. |
| Superior Oil, No. 14-B.B., Wilmington, Los Angeles | 4- 5-13 | 2,153 | sd. sh. drlg. |
| Texas Co., No. 2 Ref., Wilmington, Los Angeles | 32- 4-13 | 2,695 | sd. sh. drlg. |
| Union Pacific R. R., No. 75 Wilmington, Los Angeles | 34- 4-13 | 2,915 | sd. sh. drlg. |
| Union Pacific R. R., No. 78 Wilmington, Los Angeles | 3- 5-13 | 3,620 | sd. sh. drlg. |
| Union Pacific R. R., No. 79 Wilmington, Los Angeles | 34- 4-13 | 3,594 | sd. sh. drlg. |
| Union Pacific R. R., No. 80 Wilmington, Los Angeles | 34- 4-13 | 3,125 | flow. 390 b.d. |
| Union Pacific R. R., No. 1-E Wilmington, Los Angeles | 34- 4-13 | 3,215 | sd. sh. drlg. |
| Union Pacific R. R., No. 2-E Wilmington, Los Angeles | 34- 4-13 | 2,925 | sd. sh. drlg. |
| Wilton Oil, No. 3 Wilmington, Los Angeles | 32- 4-13 | 3,630 | O.S. drlg. |
| Texas Co., No. 18 Baldwin, Montebello, Los Angeles | 5- 2-11 | 6,520 | hd. sd. drlg. |
| Union Oil, No. 4 Flood Control, Los Angeles | 13- 4-13 | 4,015 | sd. sh. drlg. |
| Hilldon Oil, No. 3-A Flood Control, Los Angeles | 13- 4-13 | 4,238 | flow. 650 b.d. |
| Abrams, John, No. 1 Flood Control, Los Angeles | 13- 4-13 | 4,247 | P.B 4,220 |
| Texas Co., No. 5 Bauman, Long Beach, Los Angeles | 19- 4-12 | 4,165 | sd. sh. drlg. |
| Texas Co., No. 4 Gray, Long Beach, Los Angeles | 20- 4-12 | 4,481 | sd. sh. drlg. |
| Powers, E. D., No. 3 Long Beach, Los Angeles | 20- 4-12 | 4,030 | sd. sh. drlg. |
| Shell Oil, No. 1 Hath, Long Beach, Los Angeles | 28- 4-12 | 6,397 | sd. sh. drlg. |
| Shell Oil, No. 15-C Long Beach, Los Angeles | 19- 4-12 | 3,057 | sd. sh. drlg. |
| Richfield Oil, No. 6-M.D., Long Beach, Los Angeles | 19- 4-12 | 3,000 | tested wet |
| Union Oil, No. 100 Santa Fe Springs, Los Angeles | 6- 3-11 | 11,314 | cleaning out |
| Continental Oil, No. 40 Bixby, Seal Beach, Orange | 2- 5-12 | 7,501 | redrlg. 6,050 |
| Standard Oil, No. 34-A Huntington, Orange Co. | 34- 5-11 | 4,450 | completing |
| W. P. R. Oil, No. 3 Huntington, Orange | 35- 5-11 | 5,768 | sd. sh. drlg. |
| Pressel & Tull, No. 1 Puente Hills, Orange | 30- 2-9 | 4,590 | hd. sh. drlg. |
| Standard Oil, No. 127 Murphy, West Coyote, Orange | 18- 3-10 | 3,240 | cmtd. 3,224 |
| Severns Drlg., No. 2 McNally, West Coyote, Orange | 18- 3-10 | 4,360 | pump. 120 b.d. |
| Union Oil, No. 29 Chapman, Richfield, Orange | 29- 3-9 | 10,496 | P.B. 7,481 |
| Standard Oil, No. 2-26 Kraemer, Richfield, Orange | 32- 3-9 | 170 | idle |
| Oil Income, No. 1 Anderson, Yorba, Orange | 22- 3-9 | 2,182 | P.B. 1,765 |
| Hjorth & Mohr, No. 1 Yorba, Orange | 22- 3-9 | 1,340 | pump. 118 b.d. |
| Berco Oil, No. 1 Milhous, Yorba, Orange | 22- 3-9 | 1,750 | rlg. to pump |
| Angeles Oil, No. 1 Jacobs, Yorba, Orange | 22- 3-9 | 1,691 | P.B. 1,676 |
| Fairfield, F. E., No. 1 Dutton, Yorba, Orange | 22- 3-9 | 1,662 | sd. sh. drlg. |
| Oliver & Owen, No. 1 Moritz, Yorba, Orange | 22- 3-9 | 1,650 | rig. to pump |
| Beth Pet., No. 1 Pickering, Yorba, Orange | 21- 3-9 | 1,094 | sd. sh. drlg. |
| Selegna Oil, No. 1-A Chino, San Bernardino | 12- 3-8 | 2,451 | sd. sh. drlg. |

# KANSAS

Week Ending January 29 (Descriptions are East unless marked otherwise)

**Barber County**

Kansas Oil Corp. No. 1 Mease, NE SE SE sec. 27-30-11w. Arb. 4,896-4,910 ft.; S.D.O.

Palmer Oil Corp. et al No. 1 Warwick, C NW sec. 29-31-10w. Rlg.

**Barton County**

R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.

Martin & Foraker et al No. 1 Dick Est., NE SW SW sec. 31-19-11w. Rlg.

C. L. Price No. 1 Hammeke, NE NE SW sec. 12-18-12w. Sil. 3,415-27 ft.; 1,800 ft. O.I.H.; bails 4 bbls. wtr. every other day.

Sinclair Prairie Oil Co. No. 1 Oser, NE SE sec. 17-16-11w. Fsg. 3,219 ft.

Texas Co. No. 1 Lowry, CNL NW SW sec. 2-17-13w. Drlg. 730 ft.

Thayer Drlg. Co. et al No. 1 Soderstrom, SE NW sec. 21-17-13w. Pay 3,223 ft.; T.D. 3,267 ft.; pot. 1,065 ft.; comp.

**Butler County**

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. S.D. 395 ft.

Steinbuchel et al No. 1 Fox, NW SE NE sec. 25-26-3e. S.D. 1,010 ft.

**Chase County**

T. D. Duffy No. 1 Leedy, NE NW NW sec. 26-22-9. Drlg. 1,035 ft.

**Chautauqua County**

Harrison No. 1 Brown, NE SE NE sec. 19-34-10. S.D. 820 ft.

I. W. Siegel No. 1 Temple, SW cor. sec. 31-32-12. S.D. 400 ft.

**Clark County**

Olson Oil Co. No. 1 Lehman, SE SW sec. 20-32-31w. Drlg. 6,202 ft.

Olson Oil Co. et al No. 1 Watkins, SW NW sec. 23-32-21w. Arb. 6,700-60 ft., T.D. 6,857 ft.; rng. 7-in. 6,800 ft.

**Cowley County**

Arthur Brewer No. 1 Clark, NE SE NW sec. 6-31-4. Rng. 12-in. 960 ft.

Dickey Oil Co. No. 1 Kansas G. & E., NE cor. sec. 22-34-3e. Fsg. 3,322 ft.

Tom Palmer No. 1 Neimaller, NE cor. sec. 14-30-4e. Drlg. 510 ft.

Trees Oil Co. and Talbott No. 1 McMinn, NE NW sec. 16-31-6. Drlg. 1,620 ft.

Earl Wakefield No. 1 Whitson, SW NE SE sec. 8-32-4e. T.D. 3,294 ft.; P.B. 3,292 ft.; pmpd. 25 B.O. and 21 B.W. in 24 hrs.

**Ellis County**

Duwe & Farris No. 1 Hadley, SE NE SE sec. 12-11-18w. Drlg. 2,661 ft.

Glimac Oil Co. et al No. 1 K. C. Life, SE SW NW sec. 5-11-18w. T.D. 3,373 ft.; pot. 941 B.O.; comp.

Hays & Sackrider No. 1 Windholtz, NE cor. sec. 2-13-16w. Drlg. 2,305 ft.

J. J. Muth et al No. 1 Penney, C N½ NE SE sec. 29-14-18w. S.D. 350 ft.

P. G. Reynolds et al No. 1 Karlin, NW cor. sec. 13-12-18w. Sil. 3,674-75 ft.; acd.; swb. 36 B.O.P.H.

**Ellsworth County**

Cities Service Oil Co. et al No. 1 Schroeder, C N½ N½ NW sec. 29-17-9w. Arb. 3,205 ft. (cor.); T.D. 3,215 ft.; 3,150 ft. O.I.H.

Colonial Oil Co. No. 1 Hogy, NW cor. sec. 16-16-10w. Drlg. 2,680 ft.

Ralph Wixson et al No. 1 Peterman, SW cor. sec. 28-17-10w. S.D. 1,920 ft.

**Greenwood County**

John Nichols et al No. 1 Central Life, SE SW sec. 35-25-12. Spd. and S.D.

**Harper County**

Franklin Drlg. Co. No. 1 Walts, NE SW sec. 24-34-6w. Drlg. 1,603 ft.

**Harvey County**

National Ref. Co. No. 1 Brown Bros., NW SE NE sec. 22-23-2w. Rng. 8-in. csg. 2,785 ft.

**Jackson County**

Lemmick Oil Co. No. 1 Marble Savings Bank, NE cor. sec. 28-9-14. Spd. and S.D.

**Jewell County**

Hollingsworth Bros. No. 1 Wolfe, NE SW SE sec. 14-4s-8w. Spd. and S.D.

**Lane County**

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. K.C. L. 4,075 ft.; drlg. 4,256 ft.

**McPherson County**

Archer & Crane No. 1 Templin, NW SW SE sec. 32-17-3w. S.D. 2,200 ft.

Carter Oil Co. No. 1 Hoglund, C W½ SW NW sec. 8-17-3w. Arb. 3,542-69 ft.; P.B. 3,373 ft.; acd.; tstg.

**Meade County**

Pacific Mid-West Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. S.D. 200 ft.; (cor.).

**Ness County**

Marshall Drlg. Co. et al No. 1 Anderson, SW NW sec. 23-16-24w. Spd. and S.D.

Trojan O. & G. Co. No. 1 Moses, C SW NW sec. 10-18-25w. S.D. 500 ft.

Trojan O. & G. Co. No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. Fsg. 3,285 ft.

**Phillips County**

C. W. Davidson et al No. 1 Elliff, SE NE NE sec. 35-5-18w. S.D. 600 ft.

**Reno County**

Carey et al No. 1 McPheeters, NE NW sec. 22-26-8w. U.R. at 3,208 ft.

McCole et al No. 1 Mathews, SW NW NW sec. 15-24-10w. Drlg. 1,520 ft.

Clyde Pulse No. 1 Payne, SW NW NE sec. 4-22-7w. Old T.D. 3,440 ft.; U.R. at 3,380 ft.

Skelly Oil Co., Kimmel & Stewart No. 1 Gorham, SW SE sec. 32-25-10w. Drlg. 3,400 ft.

**Rice County**

Joe Aylward No. 1 Weihe, SW NE sec. 23-18-9w. H.F.W. 3,667 ft., T.D.; D.&A.

Price et al No. 1 Gemeinhardt, NE SE sec. 18-18-10w. Drlg. 2,835 ft.

Skiles et al No. 1 Campbell, SE NE sec. 28-19-9w. T.D. 3,208 ft. (cor.); pmpd. 152 B.O. in 20 hrs.

Western Kansas Oil No. 1 Bailey, SW NW sec. 19-20-6w. Arb. 3,816-75 ft., T.D.; D.&A.

W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. Chat 3,346-55 ft.; to deepen.

**Rooks County**

Graham et al No. 1 Fike, SW cor. sec. 9-8-17w. T.D. 3,326 ft. pmpd. 50 B.O. and 35 B.W. in 8 hrs.; fsg.

Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. Set 12-in. 320 ft.; W.O.C. 330 ft.

**Rush County**

Duwe & Brouk No. 1 Lebsack, SE SE NE sec. 13-16-16w. Sil. 3,492-95 ft.; 1,500 ft. sulfur water in hole in 2½ hrs.; T.D. 3,512 ft.; S.D.O.

**Russell County**

Emrichs et al No. 1 Anderson, NE SE SW sec. 33-15-11w. Spd. and S.D.

Hess et al No. 1 Reinhardt, NE SW sec. 36-12-14w. Drlg. 1,460 ft.

Phil-Han & Hinkle No. 1 Reinhardt, SE SW sec. 19-14-14w. Pay 3,242-46 ft., T.D. 2,800 ft.; pot. 933 B.O.; comp.

Winkler & Koch No. 1 Jones, SE SE NW sec. 22-14-13w. Sil. 3,180 ft.; S.D.O.

**Sedgwick County**

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. Fsg. 1,550 ft.

McKnab No. 1 Garrett, SE SW SW sec. 18-29-2e. Drlg. 792 ft.

I. W. Murfin et al No. 1 Martin, SE NW sec. 32-28-1e. T.D. 3,491 ft.; acd.; swb. 45 B.O. in 24 hrs.

Reeves & Kinnan No. 1 Heim, SW cor. sec. 5-29-3w. Arb. 4,317 ft.; T.D. 4,330 ft.; D.&A.

Steinbuchel et al No. 1 McAdams, SW NE sec. 28-20-1e. U.R. csg. at 2,873 ft.

Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. T.D. 2,400 ft.; S.D.

**Stafford County**

Carter Oil Co. No. 1 Andress, CNL SE sec. 2-21-13w. Drlg. 3,035 ft.

Cardinal Oil Co. et al No. 1 Sittner, SW cor. sec. 4-22-12w. Sat. 3,686-96 ft.; acd.

Hippie et al No. 1 Moses, NW SW sec. 9-22-13w. H.F.W. 3,804-07 ft.; P.B. 3,635 ft.; perf. csg.

Fred Rust No. 1 Hullman, SW cor. sec. 5-22-12w. Drlg. 1,585 ft.

J. I. Shaffer et al No. 1 Newell, NE SE sec. 20-24-11w. Drlg. 3,110 ft.

Torry & Feaster et al No. 1 Heggy, NE SW sec. 26-23-11w. S.D. 3,743 ft.

**Sumner County**

Cities Service Oil Co. No. 1 McCoy, SE SW sec. 11-35-2e. Drlg. 3,690 ft.
Saco Oil Co. No. 1 Phipps, SW SE NE sec. 24-30-1w. Spd. and S.D.
E. B. Shawver No. 1 Stewart, NW SE sec. 4-32-3w. Drlg. 1,910 ft.

**Tregc County**

Carlock No. 1 Kinzel, SW SW sec. 9-13-22w. Spd. and S.D.

## NEBRASKA WILDCATS

Arab Pet. Corp. et al No. 1 Ogle, SE SE sec. 9-1n-14e. Viola 3,019 ft.; Granite sec. 9-1n-14e, Richardson County. Viola 3,019 ft.; Gran. 3,423 ft., T.D.; S.D.O.

# OKLAHOMA

Week Ending January 29

## NORTHERN OKLAHOMA

**Beckham County**

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Drlg. 2,631 ft.

**Caddo County**

Indian Terr. Illum. Oil Co. No. 1 Dome-Bo, C NE SE sec. 29-6-10w. T.D. 6,900 ft.; perf. csg.; to make squeeze job.

**Cleveland County**

W. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. Rig.
Harper-Turner No. 1 Pollock, C W½ NW NW sec. 13-9-2w. Drlg. 7,315 ft.

**Comanche County**

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1n-13w. S.D. 340 ft.

**Creek County**

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,600 ft. W.I.H. and S.S.O.; S.D.

**Garfield County**

H. R. Hollenback et al No. 1 Clark, NW cor. sec. 34-21-6w. Second Wilcox 7,298 ft.; T.D. 7,320 ft.; rng. Schlumberger.

**Garvin County**

B. C. D. Edwards No. 1 Clark, NE cor. sec. 16-3n-3e. T.D. 2,676 ft.; P.B. 2,088 ft.; perf.; swb. 6 bbls. fluid in 1 hr.; est. half wtr.

**Grady County**

Doyle Pet. Co. No. 1 Huffine, NW NW SE sec. 30-5-8w. Drk.
Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. Drlg. sh. 10,060 ft.

**Grant County**

Magnolia Pet. Co. No. 1 Reynolds, NE NE SE sec. 19-25-5w. Drlg. 6,135 ft.

**Greer County**

R. W. McDonald No. 1 Fite, SE SE sec. 34-7-21w. T.D. 820 ft.; U.R. csg.
J. I. Medlin et al No. 1 Broudie, NW cor. sec. 5-6n-20w. T.D. 90 ft.; (cor.); S.D.

**Hughes County**

Homer Doup et al No. 1 Bank, NE NE NW sec. 7-7-9. Fsg. 290 ft.
Kenneth Ellison et al No. 1 Metropolitan, C NE NE sec. 14-7-9. T.D. 4,136 ft.; D.&A.
Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. Drlg. 6,010 ft.

**Kay County**

F. S. Freeland et al No. 1-A Watson, NE NW NW sec. 28-28-1w. Rig on ground.
Helmerich & Payne No. 1 Scott, SE SE NE sec. 20-28-1w. Arb. 3,706 ft.; T.D. 3,716 ft.; P.B. 3,600 ft.; D.&A.
E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

**Kiowa County**

Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. Drlg. 623 ft.
Hughes & Reese No. 1 Fultz, SE cor. sec. 10-6-18w. T.D. 1,238 ft.; fsg.

**Logan County**

Arrow Drlg. Co. No. 1 Dodson, NW cor. sec. 23-17-1w. Drlg. 1,020 ft.

**Major County**

Ed V. Parsons et al No. 1 Patzkowsky, C NW sec. 10-20-11w. Rig.

**Okfuskee County**

Broswood Oil Co. No. 1 Lehman, NW SW NW sec. 21-13-10. Drlg. 1,650 ft.
Mid-Continent Pet. Corp. No. 1 Inland, SW NE SW sec. 10-13-10. Wilcox 3,420 ft.; T.D. 3,431 ft.; swb. 125 bbls. in 24 hrs.

**Okmulgee County**

Phillips Pet. Co. No. 1 Wood, NW SW SW sec. 31-11-13. Drlg. 3,215 ft.

**Osage County**

Norbla Oil Co. and Carter Oil Co. No. 1 Osage, NW cor. sec. 3-24-6. Spd.

**Pontotoc County**

H. W. Lee No. 1 Weatherly, NW SE NW sec. 24-1n-7. Drlg. 457 ft.
Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. Spd.
H. Riddle et al No. 1 fee, NW SW SE sec. 11-3n-5e. Drlg. 3,850 ft.
Union Dev. Co. No. 1 Abbott, SW NW NE sec. 34-3-6. S.D. 3,320 ft.

**Seminole County**

H. V. Woodson and Marydun Oil Co. No. 1 Gilliland, SE SW sec. 24-11-7. T.D. 4,293 ft.; rng. 5-in. csg.

**Texas County**

Hagey et al No. 1 Peck, C NE sec. 6-1n-13ecm. T.D. 2,842 ft.; set 7-in. csg. 2,766 ft.

**Washita County**

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. Drlg. 2,004 ft.

## SOUTHERN OKLAHOMA

**Atoka County**

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Ridgway, NE cor. sec. 24-3s-9. Spd.
C. M. Sheldon and Gardner Pet. Co. No 1 Lee, NE NW SW sec. 2-4s-10e. U.R. 2,215 ft.

**Bryan County**

Southern Oil Co. No. 1 Henry, NW NW NE sec. 10-8s-7. Drlg. 2,040 ft.

**Choctaw County**

V. K. Chapman and T. N. Low No. 1 Hallum, NE NW NW sec. 4-7s-20. T.D. 340 ft.; fsg.
J. A. True No. 1 Boby, C NW SW sec. 17-7s-19e. T.D. 2,044 ft.; S.D.O.

**Coal County**

Carter Oil Co. No. 1 Claytor, C W½ NE SW sec. 27-2n-9e. T.D. 6,715 ft.; P.B. 6,482 ft.; flw. 219 B.O. in 21 hrs.; died; tstg.

**Cotton County**

Bowers & Wise No. 1 Pendergraft, NW SE SW sec. 4-4s-12w. Spd. 16 ft.; S.D.

**Jefferson County**

Massad & Swansberger No. 1 Barrett, NE SE SE sec. 14-6s-6w. T.D. 1,890 ft.; S.D.

**Johnston County**

Patton et al No. 1 McCrummins, C SW SW NE sec. 16-1s-6e. S.D. 1,380 ft.
W. T. Sheldon No. 1 Chapman, C NW NW sec. 26-4s-6e. Drlg. 2,820 ft.

**Marshall County**

Paul Robb et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. O.W.D.D.; C.O. to 720 ft.; S.D.

**Murray County**

Sinclair Prairie Oil Co. No. 1 Lancaster Trust, C SW NE sec. 10-1-2e. T.D. 4,404 ft.; freeing stuck pipe.

**Stephens County**

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; P.B. 9,164 ft.; drlg. in new hole 9,035 ft.
Helmerich & Payne No. 1 Pfile, SW cor. sec. 1-2s-7w. T.D. 4,246 ft.; set 5⅛-in. csg. 3,973 ft.

**Tillman County**

Cavens et al No. 1 Southerland, SW SW NW sec. 35-4s-16w. T.D. 44 ft.; abd.
Indian Terr. Illum. Oil Co. No. 1 Drum, C N½ SW NW sec. 32-2s-17w. T.D. 3,795 ft.; set csg. 3,793 ft.
M. G. Martin No. 1 Parris, NW NW SW sec. 3-3s-19w. Drlg. 1,770 ft.
Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. T.D. 1,581 ft.; S.D.
Tom Walker No. 1 Bowman, SW SW NW sec. 10-4s-17w. T.D. 200 ft.; abd.

# LOUISIANA

## NORTH LOUISIANA PROVEN

**Caddo—Rodessa**

F. W. Burford No. 1 Brown, NE cor. SE sec. 5-23-16. Drlg. sh. 578 ft.
F. W. Burford No. 3 Terry, sec. 2-23-16. Set 7-in. csg. 5,983 ft.; T.D. 6,025 ft.; to reset and acidize.
Clark Oil Corp. No. 1-C Sharp, sec. 4-23-16. Set 7-in. csg. 5,965 ft.; T.D. 6,045 ft.; swbg.; 5,300 ft. O.I.H.
J. S. Rushing No. 1 Alexander, NW cor. sec. 3-23-16. Set 10¾-in. csg. 1,926 ft.
Standard Oil Co. of La. No. 1 Rodessa Oil & Ld. Co., NE cor. NE NE sec. 10-23-16. R.U.
Standard Oil Co. of La. No. 1 Spearman, NE SE sec. 3-23-16. Mitchell sd. 5,933-43 ft.; T.D. 5,987 ft.
Standard Oil Co. of La. No. 2 Terry, sec. 2-23-16. Set 7-in. csg. 5,954 ft.; T.D. 5,995 ft.; comp.; 33 B.P.H.; ½-in. ck.
Union Prod. Co. No. 6 Harris, sec. 10-23-16. Cg. 5,817 ft.
Union Prod. Co. No. 7 Harris, NW cor. NE sec. 10-23-16. Drlg. 2,084 ft.

## N. LOUISIANA WILDCATS

**Bienville Parish**

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. T.D. 7,371 ft.; rmg. to bttm.

**Bossier Parish**

L. W. Dennis No. 1 Roos, SW NW NW sec. 13-19-12. Perf. 840-42 ft.; tstd. S.W.; S.D. 864 ft.
Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. S.D. 1,380 ft.

**Caddo Parish**

Anderson & Gilbert No. 1 Pittman, SE cor. SW sec. 14-19-14. S.D. 25 ft.
W. D. Chew No. 4 Spell, SE sec. 29-21-15. Drlg. 1,515 ft.
L. T. Davis No. 3 Styles, SE cor. sec. 17-21-16. R.U.
Double "T" Oil Co. No. 1 Goodwin, NW cor. sec. 33-21-15. Set 6-in. csg. 1,410 ft.; W.O.S.R.; T.D. 1,630 ft.
J. P. Driscoll et al No. 2 Muslow, SE cor. NE NW sec. 4-20-15. Drlg. sh. 1,650 ft.
W. D. Flynn No. 3 Natalie, SW cor. sec 10-21-16. T.D. 1,029 ft.; tstd. S.O. and some S.W.
W. H. Harrison, Jr., No. 3 Crystal Shoreline, SW cor. SW NW sec. 25-21-16. Drlg. sh. 900 ft.
Louisiana Oil Prod. Co. No. 3-D Muslow, SE cor. sec. 5-20-15. Comp. on pmp.; 15 B.P.D.; T.D. 2,214 ft.
Louisiana Oil Prod. Co. No. 4-D Muslow, SE cor. sec. 5-20-15. Set 7-in. csg. 2,134 ft.; T.D. 2,196 ft.; comp. on pmp.; 40 B.P.D.
Louisiana Oil Prod. Co. No. 14-B Muslow, sec. 4-20-15. S.D. 2,130 ft.; high wtr.
La. Oil Prod. Co. No. 3-C Muslow, sec. 9-20-15. Set 7-in. csg. 2,136 ft.; T.D. 2,172 ft.; comp. on pmp.; 50 B.P.D.
Magnolia Pet. Co. No. 23 Dillon Hrs., NW cor. NE NE sec. 23-21-15. Drk.
J. F. Mitchell No. 1 Muslow, NE cor. sec. 31-21-15. S.D.; repair rig 950 ft.
Olson Drlg. Co. No. 1 Sharp, C NW NE sec. 10-18-16. R.U.
Patterson & O'Mara No. 1 Player, 330 ft. S and E, C sec. 26-21-15. Drlg. 2,008 ft.; O.W.W.O.; old T.D. 1,604 ft.
Petroleum Heat & Power Co. No. 1 Wemple, NW cor. sec. 14-20-15. Set 10-in. at 80 ft.; W.O.C.
A. D. Robinson No. 1 Wilkinson, sec. 22-20-14. Drlg. L. 2,717 ft.
J. E. Sedberry No. 1 Dickinson, NW sec. 15-19-14. Set 6-in. csg. 2,443 ft.; T.D. 2,443 ft.
Raymond Wright No. 1 Hobbs, NE cor. sec. 29-21-15. Drlg. 560 ft.

**Caldwell Parish**

G. W. Ziegen No. 12 La. Cen. Lbr. Co., sec. 20-14-3e. Set 12-in. csg. at 82 ft.

**Catahoula Parish**

G. C. Foster et al No. 1 Peck, S½ sec. 38-10-8e. Set 16-in. csg. 21 ft.; S.D.

**Claiborne Parish**

Atlantic Ref. Co. No. 2-B Bean, C S¼ NW NE sec. 1-5-3E. Set 5½-in. csg.; T.D. 5,206 ft.
Atlantic Ref. Co. No. 2-D Patton, C S½ SE SE sec. 29-21-4. Drlg. sh. 2,750 ft.
T. L. James No. 2 Fowler, NE SW sec. 32-21-4. Drlg. sh. 2,863 ft.
J. R. McMurray No. 1 Bean, C N½ SE NW sec. 32-21-4. R.U.
Magnolia Pet. Co. No. 1 Fowler, C W½ NW SE sec. 28-21-4. Set 7-in. 5,193 ft.; T.D. 5,209 ft.; comp.; 40 B.P.H.; ½-in. ck.
A. O. Olson et al No. 2 English, NE SE sec. 29-21-4. Drlg. 4,105 ft.
C. R. Schuster No. 1 S. Lloyd, SW SW sec. 2-20-5. T.D. 5,271 ft.; set 5½-in. csg.
Sloan & Zook No. 1 Aycock, SE sec. 1-20-5. Drlg. 2,413 ft.
Sloan & Zook No. 6 Patton Est., C W½ NE SW sec. 1-20-5. Set 10¾-in. csg. 873 ft.; drlg. 5,157 ft.
Union Prod. Co. No. 2 Brownfield, sec 5-19-5. O.W.D.D.; drlg. 9,411 ft.
Union Prod. Co. No. 1-A Kilpatrick, sec 11-19-6. Drlg. 4,676 ft.
G. H. Vaughn No. 3 Eppinger, C S½ NW SW sec. 29-21-4. D.S. stuck 4,915 ft.

**De Soto Parish**

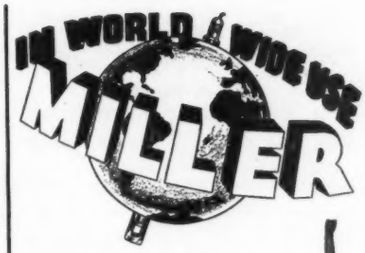
A. P. Barnett No. 1 Jal Drlg. Co., NW cor. SE SW sec. 7-11-11. Drlg. sh 2,430 ft.
Jal Drlg. Co. No. 10-A Scales, sec. 36-13-12. Set 5½-in. csg. 2,418 ft.; comp.; 93 B.P.D. on pmp.
Pet. Heat & Power Co. No. 1 DeSoto Corp., SE cor. SW NW sec. 7-11-11. Drlg., 1,114 ft.
Pet. Heat & Power Co. No. 1 Jal Drlg. Co., SW cor. SE NW sec. 7-11-11. Set 10-in. csg. 220 ft.
Pet. Heat & Power Co. No. 1 Matthews, sec. 29-12-11. Set 10-in. csg. 200 ft.
Pet. Heat & Power Co. No. 2 Matthews, sec. 30-12-11. Drlg. 100 ft.
Pet. Heat & Power Co. No. 1 Taylor, NE cor. NE SE sec. 12-11-12. Cg. 2,820 ft.
Pet. Heat & Power Co. No. 2 Taylor, sec. 12-11-12. Drk.
Pet. Heat & Power No. 1 Williams Est., NE cor. SW SE sec. 12-11-12. R.U.

**Franklin Parish**

Southern Star Pet. Co. No. 2 Grayson, NE cor. NE SE sec. 36-12-6e. Drlg. 220 ft.

**La Salle Parish**

Pet. Heat & Power Co. No. 1 Gaharan,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With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

• SAND BOTTOM
Used when tools are run and when well is shot to quickly remove loose material.

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Used for cutting the sand loose.

• CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

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See Page 1186 COMPOSITE CATALOG

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FOR SALE BY SUPPLY STORES EVERYWHERE

Lot 7, Blk. 1, Holmes & Adams Addn., sec. 25-10-1e. Drk.
Stovall, Tr., No. 4 Russell, SE SE sec. 25-10-1e. 6-in. csg. at T.D. 1,518 ft.; W.O.S.R.

**Lincoln Parish**

F. H. Brown No. 2 Patton, C S½ SE SW sec. 6-20-4. R.U.
Delta Drlg. Co. No. 1 Weiss & Tatum, C S½ NW NE sec. 7-20-4. Drlg. 3,635 ft.
Love Bros. No. 2 Patton Est., sec. 6-20-4. Set 10-in. csg. 748 ft.
Lyon & Neely No. 1-B Patton, SE SE sec. 6-20-4. Drlg. 5,100 ft.
Magnolia Pet. Co. No. 1 Pollack, C N½ NE SE sec. 6-20-4. Drlg. 4,010 ft.
E. T. Oakes & Easton No. 1 Griggs, sec. 36-18-1w. Set 5½-in. csg. 6,259 ft.; Schlumberger survey showed sat. 6,231-40 ft.; set 5½-in. at 6,121 ft.; perf. 5,931-40 ft.; 48 shots; swbd. dry; trtd. with 2,000 gal. acd.; reacd. 5,000 gal.; S.G.; swbg.

**Morehouse Parish**

W. J. Furlong No. 1 Clark, sec. 10-20-7e. T.D. 6,025 ft.; S.D.

**Red River Parish**

Arkansas Fuel Co. No. 1 Frankland Realty Co., NW sec. 20-11-9. Drlg. 7,013 ft.
Glassell & Whitehurst No. 1 LeLong, NE NW NE sec. 25-12-11. Set 13⅜-in. csg. 250 ft.; cond. mud.
J. C. Prine No. 1 Haynes, SW sec. 20-13-10. T.D. 2,550 ft.; abd.
Yandell Rogers No. 5 Gaspair, SE SW sec. 27-13-11. Cg. 2,493 ft.

**Sabine Parish**

Hunter Co. No. 2 Long Bell Lbr. Co., C NE NE sec. 23-7-13. Set 6-in. csg. 2,226 ft.; tstd. dry 2,650 ft. and 2,679 ft.; D.&A.; S.W.
Major Oil Co. No. 1 Graham, NW cor. sec. 20-9-13. R.U.
W. L. Posey No. 1 Hale, C NE NW sec. 12-7-13. Comp.; 35 B.P.D. and 1,000,000 ft. gas; 6-in. csg. 2,130 ft.; T.D. 2,135 ft.
Sutton-Zwolle Oil Co. No. 1 Sabine Lbr. Co., SE cor. NW NE sec. 23-7n-14w. Set 9⅝-in. csg. 2,215 ft.

**Tensas Parish**

H. M. Jones No. 2 Chicago Mill & Ld. Co NE NW sec. 31-12-10e. Cg. sh. 760 ft.

**Union Parish**

Joe Modisett No. 1 Frost Lbr., sec. 14-21-1e. T.D. 7,005 ft.; S.D.

**Webster Parish**

S. W. L. Backus No. 4 Pardee Co., NE sec. 3-22-11. R.U.
H. L. Hunt Oil Co. No. 1 Hone, C SW NW sec. 24-21-10. Drlg. 5,308 ft.
C. E. Lunsford No. 1 Turner, SW cor. SE sec. 20-20-8. S.D. 1,805 ft.
Magnolia Pet. Co. No. 7 Marshall, SW SE sec. 21-21-10. Set 7-in. csg. 8,377 ft.; T.D. 8,405 ft.; comp.; 630 bbls. dist. and est. 8,000,000 ft. gas on ¾-in. ck.
Magnolia Pet. Co. No. 2 Mixon, sec. 22-21-10. Drlg. 7,364 ft.
Magnolia Pet. Co. No. 1 Sexton Unit, NW SE sec. 32-23-9. Drlg. 6,240 ft.
North American Oil Co. and Root Pet. Co. No. 1 Coyle, NE SW sec. 28-21-10. Drlg. 7,665 ft.
North American Oil Consol. Co. No. 1 Stewart, C SE NE sec. 32-27-10. Drlg. L.&sh. 4,865 ft.
Ohio Oil Co. No. 2 Bodcaw Acct. 4, SW SE NW sec. 24-21-10. Drlg. 7,575 ft.
Ohio Oil Co. No. 48 Bodcaw Acct. 2, SE sec. 15-21-10. Drlg. 7,732 ft.
Ohio Oil Co. No. 49 Bodcaw (Acct. 3), C NW NW sec 34-21-10. R.U.
Ohio Oil Co. No. 23 Gray Acct. No. 1, SE sec. 27-21-10. Drlg. 7,223 ft.
Ohio Oil Co. No. 2 Warren Cox, SE sec. 23-21-10. Set 7-in. csg. 8,070 ft.; T.D. 8,110 ft.
A. G. Oliphant No. 2 Banks, C SE NW sec. 34-21-10. Drlg. 5,210 ft.
A. G. Oliphant No. 1 Central Inv. Co., C NW SE sec. 33-21-10. R.U.
A. G. Oliphant No. 1 Stewart, sec. 33-21-10. Set 13⅜-in. csg. 666 ft.
Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. Drlg. 4,590 ft.
Union Prod. Co. No. 4 Stewart, SE cor. SE sec. 28-21-10. Drlg. sh. 4,497 ft.

**Winn Parish**

G. W. Ziegen No. 13 La. Cen. Lbr. Co., sec. 4-13-1e. 12-in. at 62 ft.; W.O.C.

## SOUTH LOUISIANA FIELDS

**Anse La Butte—St. Martin Parish**

Crusader Oil Co. No. 2 Central Oil Co., sec. 86-9s-5e. Drlg. 20 ft.
Austin B. Taglar No. 4 Begnaud, sec. 113-9s-5e. T.D. 1,970 ft.; 7-in. csg. 1,916 ft.; perf. csg. 1,693-98 ft.; showed dry gas; killed; will perf. 1,320-28 ft.; tstd. S.W.; dry gas; pulling screen and lnr.
Austin B. Taylor No. 5 Begnaud, sec. 117-9s-5e. T.D. 836 ft.; 7-in. csg. 826 ft.; swbd. dry.
Austin B. Taglar No. 1 Martin, sec. 71-13s-9e. T.D. 1,750 ft.; salt 5 A.-in. csg. 1,750 ft.; swbd. S.W. and oil; abd.

**Bay St. Elaine—Terrebonne Parish**

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.

**Bayou Blue—Iberville Parish**

Humble O. & R. Co. No. 1 Schwing, sec. 67-9s-11e. Top sd. show oil 6,827 ft.; T.D. 6,837 ft.

**Bayou Cocotris—Terrebonne Parish**

Shell Pet. Corp. No. 4 Pelican, sec. 19-17s-15e. 10¾-in. csg. 2,452 ft.; T.D. 9,508 ft.; oil sd.; I.P. 604 B.P.D.; 12/64-in. ck.
Shell Pet. Corp. No. 4-B Realty Operators, sec. 17-17s-15e. Drive piling.

**Bayou De Allemands—St. Charles Parish**

Amerada Pet. Corp. No. 1 St. Charles Ld. Co., sec. 38-15s-20e. 10¾-in. csg. 2,695 ft.; top salt 9,255 ft.; T.D. 9,263 ft.; 7-in. csg. 7,200 ft.; Schlumberger shwd. 7¾ ohms, 130 millivolts; P.B. 6,940 ft.; perf. csg. 6,928-31 ft.; D.S.T. showed S.W.; slight gas show; squeezed off perf.; set retainer at 6,886 ft.; drld. out to 6,940 ft.; perf. csg. to test.

**Big Lake—Cameron Parish**

Union Sulphur Co. No. 2 Miami Corp., sec. 19-12s-8w. Drlg. sh. 4,569 ft.

**Black Bayou—Calcasieu Parish**

Shell Pet. Corp. No. 39 Watkins. P.B. 4,594 ft.; perf. lnr. 4,575-90 ft.; I.P. 471 B.P.D.; 14/64-in. ck.

**Bosco—Acadia Parish**

Superior Oil Co.-Pure Oil Co. No. 5 Larcade, sec. 35-8s-3e. T.D. 10,216 ft.; P.B. sdtrkd.; T.D. 9,927 ft.; 9⅝-in. csg. 7,536 ft.; T.D. 10,326 ft.; P.B. 9,423 ft.; drlg. sh. 9,912 ft.

**Edgerly—Calcasieu Parish**

La. Crude Oil Co. No. 1 La. Prairie, sec. 6-9s-11w. T.D. 4,825 ft.; sd., S.O.

**Cameron Meadows—Cameron**

Burton-Sutton Oil Co. No. 21 Sch. Ld., sec. 16-14s-13w. Cg. sd. 4,068 ft.
Burton-Sutton Oil Co. No. 22 Sch. Ld., sec. 16-14s-13w. R.U.
Magnolia Pet. Co. No. 21 Cameron Meadows, sec. 21-14s-13w. 13⅜-in. csg. 1,173 ft.; 9⅝-in. csg. 4,080 ft.; P.B. 4,041 ft.; I.P. 350 B.P.D.; pmpg.

**Cheneyville—Rapides Parish**

Amerada Pet. Corp. No. 4 Weil, sec. 53-1s-2e. Drlg. sh. 5,961 ft.

**Charenton—St. Mary Parish**

Pan American Prod. Co. No. 1 Bourdreaux, sec. 21-13s-9e. Abd. loc.
Pan American Prod. Co. No. 1 Eucer, sec. 11-13s-9e. Drlg. sh. 9,970 ft.
Pan American Prod. Co. No. 1-A Kern, sec. 21-13s-9e. Abd. loc.
Pan American Prod. Co. No. 1 Parro, sec. 36-13s-9e. T.D. 8,550 ft.; abd.
Pan American Prod. Co. No. 1 Robichauv, sec. 11-13s-9e. T.D. 1,906 ft.; 7-in. csg. 1,848 ft.

**Choctaw—Iberville Parish**

Louisiana Crusader Oil Co. No. 1 E. B Schwing, sec. 29-8s-11e. Drlg. sh.&sd. 8,880 ft.; W.O.C.
Standard Oil Co. No. 8 Gay, sec. 52-9s-11e. T.D. 6,019 ft.; cmtg. surf. csg.

**Darrow—Ascension Parish**

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. T.D. 60 ft.; S.D.
Humble O. & R. Co. No. 2 Landry, sec. 34-10s-2e. Drlg. sdy. sh. 4,690 ft.

**Dog Lake—Terrebonne Parish**

Texas Co. No. 21 State, sec. 5-22s-16e. T.D. 7,412 ft.; abd.

**Fausse Point—Iberia Parish**

Texas Co. No. 4 State, sec. 35-11s-8e. 18⅝-in. csg. 90 ft.; drlg. sdy. sh. 6,885 ft.

**Four Isle—Terrebonne Parish**

Texas Co. No. 9 L.L.&E., sec. 24-21s-16e. T.D. 8,553 ft.; P.B. 3,881 ft.; sdtrk T.D. 6,943 ft.; 9⅝-in. csg. 6,870 ft.; rmg. at 6,918 ft.

**Garden Island—Plaquemines Parish**

Texas Co. No. 25 State, sec. 37-23s-33e. Top salt 6,111 ft.; 7-in. csg. 5,926 ft. I.P. 1,492 B.P.D.; ⅝-in. ck.

**Gillis—Calcasieu Parish**

Union Sulphur Co. No. 2 Mary McIvor, sec. 14-9s-8w. T.D. 7,165 ft.; 5-in. csg. 7,165 ft.; P.B. 7,142 ft.; set cmt. retainer; squeezed off perf.; perf. csg. 7,136-38 ft.; run screen and lnr.; flwd. oil; sanded up; S.D.
Union Sulphur Co. No. 6 Kaufman, sec. 13-9s-8w. Drlg. sdy. sh. 8,051 ft.

**Hackberry—Cameron Parish**

W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.
Daryl Davis No. 1 Doiron, sec. 37-12s-10w. S.D. 40 ft.
F. J. LeBlanc No. 1 Doiron, sec. 36-12s-10w. Drlg. sh. 3,520 ft.
Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.
Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. Drlg. sh. 5,200 ft.
Stanolind O. & G. Co. No. 8 Duhon, sec. 22-12s-10w. R.U.
Superior Oil Co. No. 1 Benson-Vincent, sec. 30-12s-10w. R.U.
Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. T.D. 4,888 ft.; 7-in. csg. 4,876 ft.; cg. sd.&sh. 5,448 ft.
Union Sulphur Co. No. 43 Watkins, sec. 24-12s-10w. T.D. 4,124 ft.; P.B. 2,385 ft.; T.D. 3,866 ft.; salt; run 7-in. csg.
York Oil Field Supply No. 3 Vincent, sec. 28-12s-10w. T.D. 2,947 ft.; milling on csg.

**Horseshoe Bayou—St. Mary Parish**

Texas Co. No. 1 St. Mary Parish Ld. Co., sec. 37-17s-9e. R.U.

**Iowa—Jeff Davis Parish**

Magnolia No. 13 Wait, sec. 12-9s-7w. T.D. 4,435 ft.; R.U. to pmp.; I.P. 112 B.P.D.; pmpg.

**Jeanerette—St. Mary Parish**

Herton Oil Co. No. 1 Teche Sugar Co., sec. 58-13s-8e. 7-in. csg. 9,884 ft.; cg. sd.&sh. 10,466 ft.

**Jennings—Acadia Parish**

W. T. Burton No. 5 Roboria, sec. 42-9s-2w. T.D. 6,842 ft.; 7-in. csg. 6,335 ft.; I.P. 540 B.P.D.; 14/64-in. ck.
H. Fostiades et al No. 1 Washington Opelousas, sec. 41-9s-2w. T.D. 6,890 ft.; well blew out; D.S. stuck.
Fred I. Getty No. 1 Jennings fee, sec. 46-9s-2w. T.D. 1,871 ft.; 6⅝-in. csg. 1,591 ft.
Gulf Ref. Co. No. 39 Arnaudit, sec. 47-9s-2w. T.D. 4,840 ft.; P.B. 2,585 ft.
Jolly Pet. Co. No. 2 McFarlain, sec. 41-9s-2w. Drk.; (corrected).
Port City Oil Co. No. 21 Jennings-Heywood, sec. 41-9s-2w. T.D. 1,980 ft.; 6⅝-in. csg. 1,798 ft.; I.P. 400 B.P.D.; flwg. and pmpg.
Reiter Foster Oil Co. No. 2 Crusel, sec. 42-9s-2w. T.D. 3,908 ft.; P.B. 3,146 ft.; S.D.
Rock Oil Co. No. 3 Gulf Martin, sec. 47-9s-2w. T.D. 2,020 ft.; P.B. 1,800 ft.; I.P. 150 B.P.D.; flwg.
Shell Pet. Corp. No. 3 Community, sec. 40-9s-2w. Cg. sh. 7,381 ft.
Stanolind O. & G. Co. No. 19 Houssiere-Latrelle, sec. 47-9s-2w. T.D. 6,448 ft.; P.B. 6,135 ft. to straighten hole; redrlg. 6,317 ft.
Superior Oil Co. No. 1 Julis Clement, sec. 46-9s-2w. T.D. 7,324 ft.; D.S. stuck; P.B. to sdtrk.; oil sd. 7,028-88 ft.; drlg. sdy. sh. 4,950 ft.
Superior Oil Co. No. 3 Iowa-Jennings, sec. 41-9s-2w. Drlg. sh. 5,880 ft.
Superior Oil Co. No. 5 Jennings-Heywood, sec. 41-9s-2w. T.D. 6,645 ft.; 7-in. csg. 6,645 ft.; I.P. 421 B.P.D.; 13/64-in. ck.
Superior Oil Co. No. 6 Jennings-Heywood, sec. 41-9s-2w. R.U.
Superior Oil Co. No. 9 Leckelt, sec. 42-9s-2w. Cg. sh. 7,223 ft.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. Top salt 3,819 ft.; S.D. 3,938 ft. D.S. stuck.

**Lafitte—Jefferson Parish**

Texas Co. No. 9 Lafitte, sec. 20-17s-24e. Drlg. sh.&L. 9,793 ft.
Texas Co. No. 1 Marrero Land & Investment Co., sec. 20-17s-24e. 13⅜-in. csg. 1,937 ft.; drlg. sh. 9,769 ft.
Texas Co. No. 2 Marrero Ld. & Inv. Co., sec. 21-17s-24e. Drlg. sh. 6,099 ft.

**Lake Hermitage—Plaquemines Parish**

Gulf Ref. Co. No. 7 Lafourche, sec. 12-18s-25e. 7-in. csg. 8,074 ft.; drlg. sh. 9,770 ft.

**Lake Long—Lafourche Parish**

Fohs Oil Co. No. 2 State, sec. 65-17s-19e. R.U.
Fohs Oil Co. No. 3 State, sec. 65-17s-19e. 10¾-in. csg. 2,743 ft.; T.D. 9,539 ft. sd. 9,517-33 ft.; P.B. 9,464 ft.; perf. csg. 9,482 ft.; drlg. sh. 11,210 ft.

**Lake Pelto—Terrebonne Parish**

Texas Co. No. 20 State, sec. 8-23s-18e. Drlg. sdy. sh.&sd. 5,207 ft.

**Leesville—Plaquemines Parish**

Texas Co. No. 63 Leesville, sec. 27-12s-22e Drlg. sd. 5,352 ft.

**Lirette—Terrebonne Parish**

Humble O. & R. Co. No. 1 Frank Wurzlow, sec. 6-19s-19e. 13⅜-in. csg. 2,796 ft. cored sd. and sh. show. oil 8,215-25 ft.; drlg. sdy. sh. 10,040 ft.

**New Iberia—Iberia Parish**

Wm. Hellis No. 5 Bolivar, sec. 56-12s-7e. Drlg. sd. 2,351 ft.
Wm. Hellis No. 4 Gulf Land, sec. 52-12s-7e. T.D. 4,798 ft.; 7-in. csg. 4,798 ft.; I.P. 139 bbls. in 24 hrs.; sanded up; cutting and pulling screen.
Wm. Hellis No. 10 Bernard, sec. 54-12s-7e. R.U.
Texas Co. No. 3 Bryant, sec. 25-12s-7e T.D. 5,098 ft.; 7-in. csg. 5,096 ft.
Texas Co. No. 10-B Hanzen, sec. 54-12s-7e. R.U.

**North Crowley—Acadia Parish**

Humble O. & R. Co. No. 1 Daly, sec. 44-8s-1e. Cg. sh. 7,942 ft.
Humble O. & R. Co. No. 2 Federal Ld. Bk., sec. 34-8s-1e. Drk.
Humble O. & R. Co. No. 2 Habetz, sec. 45-8s-1e. Drk.
Humble O. & R. Co. No. 2 Ohlenforst, sec. 34-8s-1e. T.D. 8,119 ft.; rng. 7-in. csg.

**Quarantine Bay—Plaquemines Parish**

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. R.U.

**Roanoke—Jeff Davis Parish**

Humble O. & R. Co. No. 5 Taylor, sec. 12-9s-4w. T.D. 9,106 ft.; 7-in. csg. 9,051 ft.

**Sorrento—Ascension Parish**

Sorrento Oil Co. No. 1 L. L. Barnard et al, sec. 16-10s-4e. 10¾-in. csg. 1,070 ft. W.O.C.

**South Elton—Jeff Davis Parish**

Stanolind O. & G. Co.-Amerada Pet. Corp No. 3-B Calcasieu Natl. Bank, sec. 2-7s-3w. T.D. 9,154 ft.; rebldg. drk. foundations.

**Starks—Calcasieu Parish**

Capital Oil Co. No. 1 Lutcher-Moore, sec. 24-9s-13w. R.U.
Lutcher Moore No. 3 fee, sec. 19-8s-12w T.D. 4,361 ft.; 6⅝-in. csg. 4,351 ft. drld. deeper; T.D. 4,367 ft.; R.U. to pmp.; I.P. 126 B.P.D.; pmpg.
J. R. Turnbull et al No. 3 Industrial Lbr. Co., sec. 19-9s-12w. T.D. 2,400 ft.; 7-in. csg. 2,378 ft.; D.D.; top cap rock 2,480 ft.; T.D. 2,510 ft.; perf. csg. 2,410-93 ft.; sanded up; pulling tbg.

**Sulphur—Calcasieu Parish**

Union Sulphur Co. No. 852 fee, sec. 29-9s-10w. T.D. 5,068 ft.; P.B. and sdtrkd.; drlg. sh. 3,865 ft.
Union Sulphur Co. No. 858 fee, sec. 29-9s-10w. Drlg. sd. 1,543 ft.

**Tepetate-Acadia Parish**

Continental Oil Co. No. 4-D Homeseekers Dev. Co., sec. 34. T.D. 8,313 ft.; I.P. 222 B.P.D.; 5/32-in. ck.

**Valentine—Lafourche Parish**

Pan American Prod. Co. No. 1-B Community, sec. 58-17s-20e. R.U.
Pan American Prod. Co. No. 15 Harang, sec. 5-17s-20e. Drlg. sd. 5,557 ft.
Pan American Prod. Co. No. 16 Harang, sec. 7-17s-20e. Drlg. sh. 4,248 ft.

**Venice—Plaquemines Parish**

Tide Water Oil Co. No. 5 Manhattan Fruit Co., sec. 26-26s-30e. Drlg. sh. 3,806 ft.

**Vinton—Calcasieu Parish**

Katina Oil Co. No. 2 Vincent, sec. 34-10s-12w. T.D. 4,303 ft.; P.B. 3,227 ft.; swbd oil and S.W.; S.D.; T.A.
M. McLean No. 17 Gray, sec. 35-10s-12w. R.U.
J. V. Redick No. 1 Vincent, sec. 34-10s-12w. T.D. 2,312 ft., oil sd.; 7-in. csg. 2,285 ft.
Sutton-Burton No. 1 Calcasieu Natl. Bk sec. 3-11s-12w. T.D. 4,500 ft.; S.D.

**Villa Platte—Evangeline Parish**

Continental Oil Co. No. 1 N. H. Hirsch, sec. 44-3s-2e. R.U.
Continental Oil Co. No. 1 La. Ld. Improvement Co., sec. 46-3s-2e. 18⅝-in. csg 247 ft.; drlg. sh. 8,670 ft.; top Cook Mtn. 7,997 ft.

**Welsh—Jeff Davis Parish**

Howard Clayton No. 1 Walshe, sec. 21-9s-5w. R.U.
Stanolind O. & G. Co. No. 1 W. B. Conover, sec. 20-9s-5w. Drlg. sh. 2,612 ft.

**White Castle—Iberville Parish**

T. D. Humphray No. 1 E. B. Adams, sec. 1-11s-12e. S.D. 6,067 ft.; P.B. and sdrkd.; T.D. 8,840 ft.; prep. to abd.
Shell Pet. Corp. No. 11 Wilbert, P.B. 6,950 ft.; perf. 6,570-80 ft.; tstg.; I.P. 332 B.P.D.; 11/64-in. ck.

## S. LOUISIANA WILDCATS

**Acadia Parish**

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft.; T.D. 3,925 ft.; D.S. stuck.
Gulf Oil Corp. No. 1 Euclia Broussard, sec. 49-10s-2w. 7-in. csg. 9,672 ft.; T.D. 9,955 ft.; D.S. stuck; abd.
Humble O. & R. Co. No. 1 Finch, sec. 22-10s-1e. Spd.

**Calcasieu Parish**

Republic Prod. Co. No. 1 Sabine Tram. Co., sec. 25-18s-14w. 10¾-in. csg. 1,981 ft.; T.D. 9,620 ft.; hole clean; S.D.; high wtr.
Shell Pet. Corp. No. 1 Calcasieu Natl. Bk., sec. 18-11s-10w. Drlg. sh. 2,936 ft.
Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; W.O.C.

**Cameron Parish**

Humble O. & R. Co. No. 1-B Miami Corp., sec. 7-14s-6w. R.U.

**Cameron Parish—Gulf of Mexico**

Superior Oil Prod. Co. et al No. 1 State Gulf of Mexico, 3,800 ft. W. 6,200 ft. S of SE cor. of irregular sec. 4-15s-8w. 10¾-in. csg. 1,157 ft.; T.D. 7,166 ft.; 7⅝-in. csg. 7,166 ft.; drlg. sd.&sh. 9,142 ft.

**East Baton Rouge Parish**

Cavalier Oil Co. No. 1 Elliott, sec. 3-9s-2e. T.D. 7,678 ft.; S.D.

**Evangeline Parish**

Schlicher Prod. Co. No. 2 Ledenois, sec 35-3s-1w. 10¾-in. csg. 250 ft.; T.D. 5,916 ft.; abd.

**Iberia Parish**

Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd at 5,788 ft.; T.D. 7,020 ft.; P.B. 6,385 ft.; to sdtrk.

**Jefferson Parish**

Triangle Oil Co. No. 1 Conroe, sec. 12-12s-11e. T.D. 3,752 ft.; D.S. stuck.

**Jefferson Davis Parish**

Union Sulphur Co. No. 1 Calcasieu National Bank, sec. 12-9s-6w. T.D. 8,524 ft.; 7-in. csg. cmtd. 8,524 ft.; P.B. 8,296 ft.; pulling screen and lnr.; to squeeze perfs.

**Lafourche Parish**

Amerada Pet. Corp. No. 1 South Coast Corp., sec. 34-15s-19e. T.D. 8,745 ft.; 9⅝-in. csg. 7,636 ft.; cored O.S. 10,209-14 ft.; cored 10,219-24 ft.; recovered 3 ft. O.S.. 2 ft. S.W. sd.; T.D. 10,314 ft.; 7-in. csg. 9,003 ft.; 5-in. csg. 10,262 ft.; perf. csg. 10,205-08 ft. and 10,183-10,201 ft.; I.P. 536 bbls. fluid per day; ¼-in. ck.
Gulf Oil Corp. No. 3 State (P.P.), sec. 35-23-21. T.D. 8,728 ft.; salt; P.B. to perf. csg.; perf. csg. 6,955-59 ft.; I.P. 304 B.P.D.; ⅞-in. ck.

**Pointe Coupe Parish**

Batchelor Oil Co. No. 1 Hackney, sec. 28-3s-8e. Drk.

**St. James Parish**

Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. R.U.

**St. Martin Parish**

Carter & Stewart No. 2 Martin, sec. 32-9s-7e. Drlg. sd.&sh. 650 ft.

Shell Pet. Corp. No. 1 Fredericks, sec. 38-8s-5e. T.D. 9,500 ft.; abd.

Shell Pet. Corp. No. 1 Unit, sec. 11-14s-12e. Cg. soft sd. 7,419 ft.

Texas Co. No. 4 State Lake Mongoulois, sec. 14-10s-9e. Drlg. sh. 5,838 ft.

**St. Mary Parish**

Pet. Heat & Power Co. No. 9, sec. 9-13s-9e. R.U.R.

**Terrebonne Parish**

Fohs Oil Co. No. 1 Buckley & Bourg, sec. 77-19s-17e. R.U.

Fohs Oil Co. No. 1 State, sec. 41-19s-19e. R.U.

# ARKANSAS

**Columbia County**

Kerr-Lynn Oil Co. No. 1 Barnett, sec. 14-17-20. D.S. stuck 7,590 ft.; loosened; prep. to drill ahead.

Standard Oil Co. of La. No. 1 Bodcaw-Barbara, NE cor. SE NW sec. 18-16-22. Set 13⅜-in. csg. 209 ft.

**Crittendon County**

Manning & Martin No. 1 Cartwright, SW cor. sec. 16-7n-8e. Drlg. 4,185 ft.

**LaFayette County**

Lillian Taubel et al No. 1 Tatum, NE cor. SE NW sec. 18-16-22. Drlg. 3,644 ft.

**Little River County**

Heenan & Coe No. 1 Waldrop, SE NW c. 21-12-28. S.D. 1,960 ft.

Joe G. Strahan et al No. 2 Dierks Lbr. Co. S.D. 1,985 ft.

**Miller County—Rodessa**

R. Lacy No. 2 Grogan, E½ W½ sec. 20-28. S.D. 2,028 ft.

R. H. Long No. 3 Greer, NE SE sec. 10-20-28. Set 9⅝-in. csg. 2,030 ft.; drlg. 2,361 ft.

McClanahan & Feazel No. 2 Eason, C N½ NW SW sec. 12-20-28. R.U. & S.D.

R. W. Newell No. 1 Thomas, NW SE sec. 12-20-28. Set 5½-in. csg. 6,130 ft.; T.D. 6,144 ft.

Nivia Oil Corp. No. 1 Cross, SE cor. SE NE sec. 11-20-28. T.D. 6,106 ft.; set 7-in. csg. 6,104 ft.; perf. 6,040-95 ft.; acid.; S.D.

Skelly Oil Co. No. 2 Thomas, NE cor. E½ SW sec. 12-20-28. Perf. 5,850-66 ft.; 47 shots; to acidize; T.D. 6,140 ft.; 7-in. csg. 6,016 ft.

Texas Canadian Oil Corp. No. 3 Thomas, NE cor. NW SE sec. 12-20-28. R.U.

Mrs. S. O. Thompson No. 2 Green, SE cor. NE SE sec. 10-20-28. Drlg. 5,215 ft.

Thompson & Jaffra No. 1-A Treadway, NW cor. SE SE NE sec. 10-20-28. Drlg. 1,660 ft.

Sam Tillingsworth No. 1 Treadway, SW cor. SE SE NE sec. 10-20-28. Drlg. 1,020 ft.

**Nevada County**

Union Products & Pet. Co. No. 4 Haynie NW sec. 6-14-20. 6-in. csg. 1,192 ft.; sd S.O. 1,170-78 ft.; comp.; pmpg. 10 B. P.D.; T.D. 1,192 ft.

Bruce E. Wallace No. 2 Haynie, SE cor sec. 5-14-21. Drlg. 1,030 ft.

**Ouachita County**

Copenhaven Oil Corp. No. 1 Evans, NE cor. NE SW sec. 20-11-19. S.D. 1,825 ft.

A. H. Tarver et al No. 1 Dean Est., SW SE sec. 16-14-19. 7-in. csg. 1,305 ft.; T.D. 1,340 ft.; P.B. 1,304 ft.; drld. to 1,320 ft.; tstd. S.W. 1,320 ft.; P.B. 1,304 ft.; W.O.C.

**Pulaski County**

A. L. Kitselman, No. 2 A. L. Kitselman Jr., SE SE SW sec. 2-1s-13e. Drlg. hd bl. slate 2,080 ft.

**Saline County**

Duncan & Gibbens No. 1 Williams, NW NE NE sec. 18-3-15. T.D. 104 ft.; abd.; will not drill.

**Union County—Shuler**

Alice Sydney Oil Co. No. 3 Morgan, NW NE SE sec. 18-18-17. T.D. 7,717 ft.; D.S. stuck 2,200 ft.

Alice Sydney Oil Co. No. 1 Powledge, SE cor. SW SE sec. O.W.W.O.; old T.D. 6,005 ft.; prep. deepen.

Ark. Southern Oil Corp. No. 2-A Simmons, SW cor. NE NW sec. 15-18-13. T.D. 2,214 ft.; set csg.; W.O.C.

E. M. Jones No. 3 Marine Oil Co., NE NW SE sec. 17-18-17. Drk.

E. M. Jones et al No. 1-A Murphy Ld. Co. Drlg. 6,500 ft.

Lion Oil Ref. Co. No. 2 Marine Oil Co SW cor. E½ SE¼ sec. 17-18-17. Drlg. 1,705 ft.

Lion Oil Ref. Co. No. 1 Miller, SW cor NE NW sec. 18-18-17. Drlg. 1,710 ft.

Lion Oil Ref. Co. No. 4-A Edna Morgan NW cor. Lot 1, SW sec. 18-18-17. Drlg. 2,310 ft.

Lion Oil Ref. Co. No. 5-B Morgan, SE cor. W½ SE sec. 18-18-17. Drlg. 4,150 ft.

Lion Oil Ref. Co. No. 4-B Edna Morgan NW SW SE sec. 18-18-17. Set 7-in. csg. 7,633 ft.

Marine Oil Co. No. 3 fee, SW sec. 17-18-17. Jones sd. 7,533-70 ft.; cg. ahead 7,570 ft.

Marine Oil Co. No. 4 fee, NW cor. SW SW sec. 17-18-17. T.D. 1,742 ft.; set 10¾-in. csg. 1,721 ft.

Marine Oil Co. No. 3 Justiss, NE cor Lot 7. NW sec. 18-18-17. Set 16-in. csg. 143 ft.; W.O.C.

Marine Oil Co. No. 4 Justiss, cen. Lot 7, NW sec. 18-18-17. Drlg. 4,823 ft.

Phillips Pet. Co. No. 1 First Natl. Bk., NE SW sec. 17-18-17. Drlg. 6,981 ft.

Phillips Pet. Co. No. 2 Justiss, NW sec 18-18-17. Set 7-in. csg. 7,700 ft.

Phillips Pet. Co. No. 1 Marine Oil Co., NE cor. NW NE sec. 20-18-17. Set 16-in. csg. 225 ft.

Phillips Pet. Co. No. 2 Marks, SW sec 18-18-17. T.D. 7,770 ft.; set 7-in. csg. 7,681 ft.

Phillips Pet. Co. No. 2 Rosen, SE cor. SW NE sec. 18-18-17. Drlg. 3,070 ft.

Texas Canadian Oil Corp. No. 1 Powledge, C NE NW NW sec. 21-18-17. R.U.; W.O. fuel.

**Union County—Other**

Penn-Ark. Pet. Corp. No. 1 Raulston, sec 12-17-14. T.D. 3,175 ft.; S.D.; litigation.

W. D. Wingfield, Tr., No. 1 Kidd Est. C NE NW SE sec. 15-18-13. Set 7-in. csg. 2,263 ft.; T.D. 2,322 ft.; sd. 2,310-22 ft.; S.O.

# TEXAS

Week Ending January 29

## GULF COAST FIELDS

**Lockridge—Brazoria County**

Gulf Oil Corp. No. 3 Gibson, J. W. Hall Sur. R.U.

Gulf Oil Corp. No. 3-A G. L. Wood, T. Alsbury Sur. Spd.

Shell Pet. Corp. No. 4-B Ramsey, J. W. Hall Sur. T.D. 6,369 ft.; 7-in. csg. 6,565 ft.

**Hastings Field—Brazoria County**

Humble O. & R. Co. No. 1 Hortsman, H.T.&B. Sur. No. 37. Drk.

Humble O. & R. Co. No. 1 M. Lerew, H.T.&B. Sur. No. 38. Cg. sh. 6,000 ft.

Humble O. & R. Co. No. 6 W. G. McDeed, H.T.&B. Sur. No. 30. Drlg. sh. 1,037 ft.

Humble O. & R. Co. No. 7 M. G. McDeed, H.T.&B. Sur. No. 30. R.U.

Humble O. & R. Co. No. 9 South Texas Grain Co., Perry and Austin Sur. T.D. 6,107 ft.; W.O.C.

Jay Simmons No. 3 C. H. Alexander, H. T.&B. Sur. No. 28. Loc.

Senisa Oil Co. et al No. 1 B. Steiner & Blummer, H.T.&B. Sur. No. 28. T.D. 6,096 ft.; tstg.

Stanolind O. & G. Co. No. 7 R. L. Autrey, H.T.&B. Sur. No. 37. R.U.

Stanolind O. & G. Co. No. 8 T. C. Edwards, Wm. Henry Sur. R.U.

Stanolind O. & G. Co. No. 1 Geo. Liverman, H.T.&B. Sur. No. 28. T.D. 5,246 ft.; rmg.

Stanolind O. & G. Co. No. 1 C. W. Massey, H.T.&B. Sur. No. 37. T.D. 3,680 ft.; P.B. 2,734 ft.; W.O.C.

Stanolind O. & G. Co. No. 16 L. D. Shaw, H.T.&B. Sur. No. 36. R.U.

Stanolind O. & G. Co. No. 3 H. M. Shyrock, H.T.&B. Sur. No. 29. Drk.

Stanolind O. & G. Co. No. 7 W. B. Wooster, A.C.H.&B. Sur. No. 1. Loc.

Stanolind O. & G. Co. No. 8 T. C. Edwards, Wm. Henry Sur. R.U.

**Old Ocean—Brazoria County**

Harrison & Abercrombie No. 5 Bernard, C. Breen Sur. R.U.

Harrison & Abercrombie Oil Co. No. 1 Troyer and West Texas Abst. Co., C. Breen Sur. R.U.

**Sandy Point—Brazoria County**

Stanolind O. & G. Co. No. 3 J. A. Fite, D. Talley Sur. Drk.

**West Columbia—Brazoria County**

Frost and Dunnan No. 1 E. S. Parker, Geo. Tennille Sur. Loc.

Sterling Oil & Ref. Co. No. 1 Powers et al, Geo. Tennille Sur. Drlg. sh. 5,000 ft.

Texas Co.-Sterling O. & R. Co. No. 6 Phillips, G. Tennille Sur. Drlg. sh.&L. 5,175 ft.

Texas Co. No. 1 T. Robinson, George Tennille Sur. Drlg. sh.&L. 4,836 ft.

Texas Co. No. 3 Smith, G. Tennille Sur. 7-in. csg. 5,537 ft.; T.D. 5,575 ft.

**Calhoun—Heyser—Victoria County**

Blanco Oil Co. and Buchanan No. 4 C. S. Dunnwoody, A. Sisneros Sur. T.D. 5,760 ft.; 7-in. csg. 5,630 ft.

Blanco Oil Co. et al No. 7 C. S. Dunwoody, A. Sisneros Sur. Drlg. sh. 2,630 ft.

Geo. Echols No. 8 W. H. Bennett, J. E. Galban Sur. Drk.

Geo. Echols No. 4 Lander, J. Galban Sur. Drlg. sh. 2,830 ft.

Gulf Oil Corp. No. 2 L. P. Schultz, J. E. Galban Sur. Drlg. sh. 3,239 ft.

Gulf Ref. Co. No. 2-B Traylor, J. E. Galban Sur. T.D. 6,038 ft.; tstg.

Humble O. & R. Co. No. 18-B P. H. Welder, A. Sisneros Sur. R.U.

Humble O. & R. Co. No. 21-A P. H. Welder, J. M. Rios Sur. Drk.

Sinclair Prairie Oil Co. No. 8 W. H. Bennett, A. Sisneros Sur. T.D. 5,750 ft.

Sun Oil Co. No. 5 Coffey, J. E. Galban Sur. T.D. 5,749 ft.; tstg.

**Seabreeze—Chambers County**

Sun Oil Co. No. 1 R. J. Barrow, A. Yarbo Sur. R.U.

Sun Oil Co. No. 1 Seabreeze Ld. Co., H.T.&B. Sur. 102. 10¾-in. csg. 1,948 ft.

Sun Oil Co. No. 1 J. T. White, sec. 118, H.T.&B. Sur. R.U.

**Silsbee—Hardin County**

Humble O. & R. Co. No. 1 B. L. Kirkendall, NE offset to No. 1 Howell, Loc.

Republic Prod. Co.-Houston Oil Co. No. 2 Ellery fee, J. Ellery Sur. Drlg. sh. 1,536 ft.

**Fairbanks—Harris County**

Amerada-Stanolind O. & G. Co. No. 1 Maggie L. Peters, W. K. Hamblin Sur., Abst. 317. R.U.

E. L. Smith and H. B. Ownby Drlg. Co. Geo. Eyers Sur. Loc.

**Friendswood—Harris County**

H. C. Cockburn et al No. 1 H. C. Cockburn, Wm. K. Smith Sur. R.U.

Humble O. & R. Co. No. 1 G. Durwood, Perry and Austin Sur. Drlg. sh. 1,536 ft.

Humble O. & R. Co. No. 1 Etta Gibson, Perry and Austin Sur. 10¾-in. csg. 1,065 ft.; drlg. sh. 4,050 ft.

Humble O. & R. Co. No. 1 J. L. Jones and E. A. Gray, Perry and Austin Sur. Drlg. 2,068 ft.

Humble O. & R. Co. No. 1-B J. L. Jones, Perry & Austin Sur. T.D. 1,063 ft.; W.O.C.

Humble O. & R. Co. No. 1 Pierce, W. K. Smith Sur. T.D. 6,050 ft.; flwd. gas; pull screen and lnr.

**Hitchcock—Galveston County**

N. W. Hunter No. 2 M. Stewart, J. Spillman Sur. R.U.

**LaBelle—Jefferson County**

Sun Oil Co. No. 3 Broussard-Hebert, B. Blackman Sur. R.U.

**North Cheek—Jefferson County**

Magnolia Pet. Co. No. 3-A Phelan, S. Stevers Sur. Crooked hole; drlg. sh. 4,068 ft.

**Hardin—Liberty County**

Atlantic Ref. Co. No. 1 J. V. Cessna, H. B. Johnson Sur. Drk.

Atlantic Ref. Co. No. 1 Wm. McMurtry, H. B. Johnson Sur. T.D. 7,656 ft.; perf. csg. 7,563-66 ft.

Atlantic Ref. Co. No. 2 W. McMurtry, H. B. Johnson Sur. M.I.M.

Atlantic Ref. Co. No. 1 Murphy, H. B. Johnson Sur. 10¾-in. csg. 1,981 ft.; T.D. 7,610 ft.; 7-in. csg. 7,591 ft.; perf. csg. 7,593-97 ft.; high gas-oil ratio; set cmt. retainer; perf. csg. 7,595-99 ft.; tstg.

Jack Frazier No. 2 B. F. Hanchey, H. B. Johnson Sur. Drlg. sh. 4,956 ft.

Jack Frazier No. 1 W. McMurtry, H. B. Johnson Sur. Drlg. sh. 6,536 ft.

Gulf Oil Corp. No. 1 J. H. Cessna, H. B. Johnson Sur. Drlg. sh. 3,212 ft.

Halliburton Oil Prod. Co. No. 1 Hanchey, H. B. Johnson Sur. R.U.

Humble O. & R. Co. No. 1 W. McMurtry, H. B. Johnson Sur. R.U.

Humble O. & R. Co. No. 1 Partlow, H. B. Johnson Sur. Drlg. sh. 7,296 ft.

McAlester Fuel Oil Co. No. 2 V. B. Hinson, H. B. Johnson Sur. R.U.

Sun Oil Co. No. 1 Cessna, A. B. Hardin Sur. T.D. 7,544 ft.; flwg. dist.; may kill to W.O.

E. W. Wickes No. 1 Tullos, H. B. Johnson Sur. T.D. 7,633 ft.; 5½-in. csg. 7,623 ft.

**South Call—Newton County**

Houston Oil Co. No. 3 Peavy Moore Lbr. Co., sec. 42, H.&T.C. Sur. T.D. 7,366 ft.; S.D.

**Bay City—Matagorda County**

Hamman Expln. Co. No. 2 Thompson, E. Hall Sur. Drlg. 3,312 ft.

Pan American Prod. Co. No. 1 Richers, I.&G.N. Sur. X-3. Drlg. sh. 2,430 ft.

**Buckeye—Matagorda County**

United North & South Development Co. No. 1 G.B.M., Cotton Lge. 7-in. csg. 8,667 ft.; T.D. 10,500 ft.; hole cleaned; W.O.O.; P.B. to 7,300 ft. to sdtrk.

**Palacios—Matagorda County**

Atlantic Ref. Co. & McCarthy No. 3 Foley Ld. Co., L. Goodwin Sur. T.D. 8,268 ft.; fsg.

**Orange—Orange County**

J. M. Campbell No. 1 Scales, Wm. Dyson Sur. M.I.M.

Gulf Oil Corp. No. 1 Cora Granger, Wm. Dyson Sur. M.I.M.

Gulf Oil Corp. No. 1 Granger Wm. Dyson Sur. R.U.

Gulf Oil Corp. No. 1 Orange National Bk., Wm. Dyson Sur. T.D. 5,922 ft.; recvd. 1,000 ft. oil; D.S.T. 5,983-5,922 ft.; run csg.

Glenn H. McCarthy No. 2 Brown, S. M. Luce Sur. T.D. 6,316 ft.

Ryan and Thompson No. 1 Norwood, Wm. Dyson Sur. Spd.

Union Prod. Co. No. 2 Lutcher-Moore, Dryson Sur. Drlg. sh. 4,110 ft.

**Segno—Polk County**

Gulf Oil Corp. No. 2 Ragan, I.&G.N. Sur. 15. Drlg. sh. 5,647 ft.

Gulf Oil Corp. No. 9 Sarah Wing, I.& G.N. Sur. No. 15. Drlg. sh. 3,537 ft.

**Spurger—Tyler County**

Republic Prod. Co. No. 7 Hurd, N. Hurd Sur. T.D. 7,380 ft.; fsg.

## GULF COAST WILDCATS

**Brazoria County**

Pure Oil Co. No. 1 Smith, S. F. Austin Sur. T.D. 7,734 ft.; 9⅝-in. csg. 7,734 ft.

Texas Co. No. 4 Freeport Sulphur Co., C. Arriola Sur. 10-in. csg. 1,214 ft.; T.D. 3,900 ft.; P.B. 2,564 ft.; sdtrkd.; T.D. 3,000 ft.; P.B. to sdtrk.; cd. sd. oil odor 3,539-48 ft.; S.D. 3,596 ft.

**Chambers County**

A. A. Cameron et al No. 1 White, Solmon Brill Sur. R.U.

Leverne Decker et al No. 1 Broussard Trust, sec. 30, H.T.&C. Sur. R.U.

Standard Oil Co. of Texas and Salt Dome Oil Corp. No. 1 State, Galveston Bay. Drlg. sh. 3,750 ft.

**Colorado County**

Coyle-Concord No. 1 Hancock-Broussard, Hill Duffner Sur. 10¾-in. csg. 1,098 ft.; drlg. sh. 4,656 ft.

**Harris County**

W. S. Howell No. 1 Root, A. McCormick Sur. Drlg. sh. 2,810 ft.

**Jackson County**

Magnolia Pet. Co. No. 1 West Ranch, R. Musquez Sur. Drlg. sh. 5,610 ft.

**Jefferson County**

I. E. Harwell No. 1 State, Gulf of Mexico. S.D. 4,050 ft.

Glenn McCarthy No. 1 J. E. Broussard, C. Hillbrand Sur. T.D. 7,732 ft.; recvd. 29 thribbles of oil, 4 thribbles of S.W. 7-in. csg. on bttm.; perf. csg. 7,730-32 ft.; rec. 1,750 ft. oil, 250 ft. S.W.; squeezed off perfs.; W.O.C.; perf. csg. 7,718-27 ft.; flwg. 6 bbls. fluid per hr., 40% brksh. wtr.; killed well; squeezed off perfs.; W.O.C.

**Matagorda County**

Pierce Estate No. 1 Pierce, I.&G.N. Sur. No. 7. T.D. 7,374 ft.; P.B.; cd. sd. in sdtrkd. hole 6,627 ft.; P.B. 6,227 ft.; stuck D.S.; fsg.

Sun Oil Co. No. 1 Fred Robbins, C. H. Vandeveer Sur. Drlg. sh. 9,317 ft.

**Polk County**

C. E. Gates No. 2 I. O. Jackson, J. W. Abbey Sur. R.U.

**Waller County**

C. W. Markel et al No. 1 Hall, B. B. Guerrgnd Sur. No. 261. R.U.

**Wharton County**

Strake Pet. Co. No. 1 Strunck, L. P. Jennings Sur. Drlg. sh. 9,095 ft.

## S. W. TEXAS WILDCATS

**Atascosa County**

L. W. Steiren No. 1 Crawford, 4 mi. W of Anchorage. T.D. 3,880 ft.; prep. to P.B. and test Austin chalk.

**Bastrop County**

J. W. Bibb No. 1 Lentz, F. Wilkenson Sur.

New MAC
PLUNGER BARREL
for 2-inch tubing

Outlasts three ordinary barrels, as Steel Plunger works in and out of Cast Iron Barrel as much as 2 feet on the up and down stroke and more if desired, thus flushing itself free of sand or gypsum.

Reversible Valve Body and Plunger make for lowest upkeep.

Furnished with 2-Cup Standing Valve and with, or without, Garbutt Rod.

Save, with the New "MAC"!

Ask for complete details and price list.

McGREGOR
WORKING BARREL COMPANY
Bradford, Pa., U.S.A.

Top Austin Chalk with odor of oil 2,530 ft.; T.D. 2,514 ft.; 5½-in. csg. 2,443 ft. tstg.; showing some oil; R.U. to pmp.
J. I. Collins No. 1 J. C. Lofton, A. J. Denson Sur. Cg. 1,798 ft.
Southern Cross Oil Co. No. 1 Smith, James B. Blalock Sur. T.D. 2,238 ft.; abd.

**Bee County**

Dirks Bros. No. 1 Mangus Beck, sec. 17, Chittim Miller Ranch Subd. Drlg. sh. 1,625 ft.
H. E. Pressy No. 1 F. H. Pressy, C. Williams Sur. Drlg. sh. 1,210 ft.

**Bexar County**

R. W. Fair No. 1 San Antonio Subd., J. H. Pickens Sur. 10-in. csg. 40 ft.; cd. L.; oil show 1,150-90 ft.; 7-in. csg. 1,-140 ft.; bailed dry; treated with acid; run tbg.; pmpg. est. 10 to 15 B.P.D.
Hikok & Reynolds No. 1 Eivert, Thomas York Sur. T.D. 550 ft.; run 12½-in. csg.
Joe H. Noake No. 1 Oppenheimer, W. Miller Sur. No. 180. Loc.
Chas. Persyn No. 1 fee, Wm. Lindsey Sur. Drlg. sh. 1,012 ft.

**Caldwell County**

Mac-Wag-Tree Oil Co. No. 1 Roberts, W. House Sur. T.D. 2,633 ft.; L.; 5½-in. csg. 2,517 ft.

**Cameron County**

Saxet Prod. Co. No. 1 Port Isabel Irrig. Co. Sur. 30. Drk.

**De Witt County**

Caldaboard Corp. No. 2 Afflerbach, I. W. Criswell Sur. Cg. 4,233 ft.
F. A. Hines No. 1 Boothe, Jas. Swindel Sur. S.D. 141 ft.; T.A.

**Dimmitt County**

Texas & Maryland Corp. No. 1 McKnight Blk. 13, sec. 23, Base of Austin Chalk 5,201 ft.; top Georgetown L. 6,120 ft.; drlg. L. 6,607 ft.

**Duval County**

Adolph Devore No. 1 E. R. Hagist, Sur. 265. Cg. sh. 1,110 ft.
Circle Oil Co. et al No. 1 Southland Life Ins. Co., Santos Flores Gr. No. 25. T.D. 5,300 ft.; abd.
Gillespie & Sons No. 1 Hamilton, J. Poitevent Sur. No. 85. 10¾-in. csg. 101 ft.; drlg. sh. 2,175 ft.
Frank Gravis No. 1 Megargal, J. Boyles Sur. R.U.
Magnolia Pet. Co. No. 1 A. Lopez, M. Lopez Sur. No. 82. Drlg. sh. 6,205 ft.
Southwood Oil Co. No. 1 Nolen, P. Cabello Sur. and F. Thompson Sur. No. 106. M.I.M.

**Edwards County**

Amon G. Carter No. 1 Sweeten, SE¼, Blk. 2, Sur. 49. T.D. 5,111 ft.; 9-in csg. 5,030 ft.; drlg. sh. 5,956 ft.; no report.
Dan Auld No. 1 Henderson, sec. 46, Blk. E. 7-in. csg. 1,865 ft.; S.D. 3,190 ft.
C. V. Lyman No. 1 Brown, Blk. 3. O.W. D.D.; drlg. sh. 5,130 ft.; no report.

**Frio County**

Pagenkopf & Jamieson No. 1 Houston Est., 2,254-ac. tr., J. Figuerroa Sur S.O. 2,610-03 ft.; set csg. to test 7-in. at 2,480 ft.; swbg.; S.O.&G. and wash wtr.; T.D. 2,651 ft.; set csg.; P.B. 2,607 ft.; pmpg. 30 bbls. fluid per day, 60 per cent oil; fluid increasing; S.D.; will probably W.O.

**Goliad County**

Rual Swiger No. 1-B Wood, J. Shearn Sur. T.D. 5,048 ft.; S.W. sd.; oil sd 5,044-48 ft.; perf. csg. 5,008-25 ft.; swbd. S.W.; set retainer 5,000 ft.; squeezed off perf.; reperf. csg. 5,009-14 ft.; recvd. 45 bbls. of oil; swbg.; I.P. 34 B.P.D.; pmpg.

**Guadalupe County**

Kreiger & Douglass No. 1 Oliver, R. Smith Sur. S.D. 2,363 ft.
Riddle Oil Co. No. 1 Weber, Guadalupe Torres Sur. Drlg. 150 ft.
E. H. Robertson No. 1 Neighbors, Hugh M. Swift Sur. Drlg. 1,910 ft.

**Hidalgo County**

Atlantic Ref. Co. No. 1 American Rio Grande. 7-in. csg. 8,505 ft.; T.D. 9,104 ft.; 5-in. csg. on bttm.; perf. csg. 8,-998-9,005 ft.; flwg. 19 bbls. dist. per day; ¾-in. ck.; tstg.; squeezed off perf.; reperf. 8,810-20 ft.; tstg.

**Jim Hogg County**

Hamill & Smith No. 1 Holbein, sec. 9, Blk. 54, Las Animas Gr. Drlg. sh. 2,-313 ft.
W. L. Stephens et al No. 1 Grey, Simon De Hinojosa Gr. 10-in. csg. 41 ft.; S.D. 2,100 ft.

**Jim Wells County**

H. M. Hill et al No. 1 Kuether, Lots 70 and 75, sec. 52, Haldeman Subd. S.D. 3,342 ft.
H. H. Howell et al No. 1 Goldapp, Jose Maria Garcia Sur. R.U.
Howell et al No. 1 Talbot, 181-ac. tr., Lavaca Gr. T.D. 6,012 ft.; P.B. 5,179 gas, some oil; reperf. csg. 3,317-22 ft.; swbg.; showing S.W.; squeezed off perf. 3,600-07 ft.; flwg. small amt. of gas; no ga.
Pan American Prod. Co.-Southern Minerals Corp. No. 1 Hawkins, San Diego De Abajo Gr. 10-in. csg. 525 ft.; drlg. sd. 5,020 ft.
Magnolia Pet. Co. No. 8 Seeligson, A. Ramerix Sur. 13⅜-in. csg. 1,206 ft.
Rowan & Hope No. 1 Robert Adams, T.&N.O. Sur. No. 19. 13⅜-in. csg. 1,-155 ft.; W.O.C.

**Karnes County**

DeGraffe & Reele No. 1 Cochran, Daniel B. McConnell Sur. T.D. 1,401 ft.; T.A.
Randon Oil Co. No. 1 Radford, M. T. Carolos Martinez Sur. Drk.

**Kleberg County**

Cinco Oil Co. No. 1 Kilam, Lot 8, Blk. 53, Kleberg Town & Imp. Co. Subd. S.D. 1,410 ft.
Magnolia Pet. Co. No. 1 Dietz, Gabriel Trevino Sur. 13⅜-in. csg. 1,220 ft., drlg. sh. 6,728 ft.
Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528 Dredging canal.

**LaSalle County**

Ralph B. Reed No. 1 Yeager, Blk. 7, Sec 8, Wallace Subd., Yeager ranch. S.D 1,320 ft.

**Lee County**

Jas. E. Pederson No. 1 Turner, David Hudson Sur. S.O.&G. 6,140-80 ft.; sdtrkd. at 4,600 ft. and drld. to 6,132 ft.; S.O.&G.; set csg. 6,021 ft.; acdzg. with 20-bbl. load; when opened well flwd 20-bbl. head and went dead; swbd. oil and wtr.; acd.; pulling tbg. to rework and wtr.; acd.; S.D.
Elecoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. S.D. 3,995 ft.

**Live Oak County**

James Chew No. 1 Alma McNeil, Alexander Parks Sur. Drlg. sh. 4,240 ft.
Harvey & Henderson No. 1 Nichols Thomas Henry Sur. Drlg. sh. 1,230 ft.
Karotkin & Richardson No. 1 Pape, Wm. R. Conner Sur. R.U.
Loma Oil Co. No. 1 Striddle. T.D. 1,280 ft.; abd.
Ray L. Martin No. 1 Adams, J. Buchannan Sur. S.D. 178 ft.
J. P. Payzor No. 1 San Antonio Joint Stock, J. J. Roberts No. 1 Mahone. Drlg. sh. 66 ft.
V. G. Schimmel No. 1 West, sec. 59, Haas Sur.; T.A.
L. W. Stiern No. 2 Longe, Thomas Adams Sur. 10¾-in. csg. 60 ft.

**Milam County**

Texedo Oil Co. No. 1 Graham, Charles Cronea Sur. S.D. 899 ft.
Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. Drlg. 850 ft.

**McMullen County**

Cities Service Oil Co. No. 1 O. E. Morris, Maria Del Pillar Perieda Sur. Cg. sh. 1,452 ft.
Coyle & Bedwell No. 1 Two Rivers Rnch. Co., sec. 60. S.D. 650 ft.
Duncan Drlg. Co. No. 1 Martin Henry, sec. 6. S.D. 707 ft.
Richardson & McCarthy No. 2 Martin, Sur. No. 7. Drlg. 580 ft.
Rowan and Nichols No. 2 Rhodes, H.& G.N. Sur. Cg. 1,375 ft.

**Medina County**

J. R. Trentman et al No. 1 Carle Merc. Co., V. A. Johnson Sur. Loc.

**Nueces County**

Renwar Oil Co. No. 1 C. McKenzie, B. S.&F. Sur. No. 419. Drlg. sdy. sh. 4,-413 ft.
Renwar Oil Co. No. 1 Morgan, A.B.& M. Sur. 10¾-in. csg. 101 ft.; drlg. sh. 4,530 ft.
Richardson Pet. Co. No. 1 Chapman, sec. 43, Laureles Farm Tr. No. 43. Drlg. sh. 6,810 ft.
Rutherford Oil Corp. No. 1 L. A. Stewart, Denman Sur. Drlg. sh. 4,216 ft.
Union Prod. Co. No. 1 Simmons, 1,000-ac tr., Agua Dulce Gr. Drlg. sd. 8,696 ft.

**Refugio County**

Continental Oil Co. No. 1 Scott Hrs., Dona A. Reogas Sur. 10¾-in. csg. 1,-490 ft.
Hogan Oil Co. No. 1 Kelley, M. & A Roache Sur. T.D. 6,437 ft.; P.B. 6,002 ft.; perf. csg. 5,992-6,006 ft.; flwd. 150 bbls. fluid per day, 15% oil, balance S.W.
Hogan Oil Co. No. 2 Kelly, J. Powers Sur. Drlg. sh. 1,200 ft.

**San Patricio County**

A. L. Bob No. 2 Green, T. T. Williamson Sur. S.D. 6,554 ft.
Conroe Drlg. Co. No. 1 J. R. Daugherty, Jas. McGloin Sur. Drlg. sh. 5,480 ft.
Plymouth Oil Co. No. 1 Brigham, Geo. H. Paul Subd. Cg. sd. 4,985 ft.

**Starr County**

J. L. Collins No. 1 Francisco B. Guerra, Santa Cruz Gr. Spd.
Dodd Tr. No. 1 Wardner, Vela Sur., Porc 84. S.D. 1,535 ft.
W. W. Ely No. 1 M. G. Gonzales, Portion 70. Run csg. to test; cd. oil sd. 751 ft.; cd. gas sd. 1,010-20 ft.; P.B. 773 ft.; perf. csg. 756-68 ft.; swbg.; S.W.; abd.
Sun Oil Co. No. 2-D Guerra, La Sacatosa Gr., 2 mi. SW of Cuevitas field. Drk.
Transwestern Oil Co. and Davenport No. 3 Slick, sec. 527. T.D. 6,862 ft.; rec. 411 but 75 ft. pipe; 5½-in. csg. 4,500 ft.; perf. csg. to test 4,173-4,259 ft.

**Travis County**

C. A. Montgomery No. 1 Lundgren, Lemuel Kimbro Sur. T.D. 1,000 ft.; abd.

**Victoria County**

W. V. Bowles No. 2 Robertson, T. C. Burnham Sur. R.U.
Geo. Echols No. 1 Dunseth, Frances Perez Sur. T.D. 6,537 ft.; run Schlumberger survey; abd.
Superior Oil Co. of Okla. and L. A. Gillespie No. 1 Mahon and Buhler, San Antonio Valley Ditch Sur., Abst. 368. M.I.M.

**Webb County**

Boysen & Jones No. 1 Watkins, San Casimero Gr. S.D. 2,280 ft.
Bridwell Oil Co. No. 1 Billings, Sur. 36 10-in. csg. 40 ft.; T.D. 2,510 ft.; abd.
Colton, Leslie and Mitchell No. 1 Lopez, F. Lopez Sur. 55. Drlg. sdy. sh. 1,-936 ft.
Gilcrease Oil Co. No. 1 Trofton, M. Lopez Sur. 282. 10¾-in. csg. 46 ft.
Smith & Storey No. 1 Haines, Sur. 234. Drlg. sh. 1,262 ft.

**Willacy County**

Magnolia Pet. Co. No. 1 Armendaiz, San Juan DeCarricitos Gr., Sh. 4. Drlg. sdy. sh. 8,310 ft.

**Wilson County**

Pattico Oil Co. No. 1 Keller, Karnes Co. Sch. Ld. Sur. S.D. 1,235 ft.; abd.

**Zapata County**

Henry Brown No. 1 Juan Gutierrez, Charco De La Indian Gr. T.D. 2,317 ft.; abd.
J. W. Edwards No. 1 Garza, El Zoro ranch, Comitas Gr. Drlg. sh. 1,600 ft.

## EAST TEXAS

*(Border Counties)*

**Cass County**

V. A. Hughes & Co. No. 1 Lyster, Bateman Sur. T.D. 4,235 ft.; T.A.
Magnolia Pet. Co. No. 12 Rives, John Collum Sur. Drk.

**Rodessa—Cass County**

Union Prod. Co. No. 5 Bangus Unit, Tromwell Sur. Drlg. sh. 4,795 ft.
G. H. Vaughn No. 1 Riley, J. Taylor Sur. R.U.

**Bowie County**

King Oil Co. No. 1 Ames, J. A. Tolbott Sur. Cg. 3,700 ft.

**Harrison County**

Ark.-La. Gas Co. No. 1 C. M. Abney, E. Little Sur. T.D. 4,820 ft.; bldg. drk.; prep. resume operations.

**Marion County—Rodessa**

Arkansas-Louisiana Gas Co. No. 1 Holland, Hanks Sur. Drlg. sh. 3,255 ft.
Ark.-La. Gas Co. No. 3 Wade Houston, Coy Sur. Drlg. sh. 4,385 ft.
Geo. Barham No. 2 Brantley, Bennington Sur. Drlg. 5,380 ft.
Fohs Oil Co. No. 1 Henderson, Ewing Sur. Set 5½-in. csg. 5,990 ft.; T.D. 6,-029 ft.
Gulf Oil Corp. No. 1 Beard, Bennington Sur. Drlg. 5,961 ft.
Gulf Ref. Co. No. 1 Beal, Coy Sur. Set 5-in. csg. 6,092 ft.; T.D. 6,111 ft.
Heyser, Heard and Clardy No. 1-B Henderson, U. Ewing Sur. Drlg. 4,030 ft.
Heyser, Heard & Clardy No. 3 Henderson, Bennington Sur. Drlg. 4,245 ft.
Phillips Pet. Co. No. 1 Pruitt-Lockett, U. Ewing Sur. Drlg. 4,426 ft.
Shell Pet. Corp. No. 2 Cooke, Bennington Sur. Drlg. 5,875 ft.
Shell Pet. Corp. No. 2-A Henderson, Bennington Sur. Set 7-in. csg. 5,994 ft.; T.D. 6,037 ft.
Shell Pet. Corp. No. 1 Whelan, Thos. Gillespie Sur. Drk.

**Panola County**

C. K. Crews No. 1 Graves, McGowan Sur. D.&A. 2,531 ft.
Glassell et al No. 1 Pierce & Chesbro, Soaps Sur. O.W.W.O.; old T.D. 5,881 ft.; W.O.
H. E. Preston et al No. 1 Rushing Est., Manning Smith Sur. T.D. 3,028 ft.; M.I. rig.

## WEST TEXAS WILDCATS

**Andrews County**

Gulf Oil Corp. No. 1 State, sec. 8, Blk. 14. Sulfur wtr. in hole; P.B.
Honolulu Oil Co. No. 1-6 Parker, sec. 6. Blk. A-6G, P.S.L. Sur. Comp.; D.&A.; T.D. 3,538 ft.
Rogers & Rogers No. 1 O. B. Holt, P.S.L. Sur. Drlg. 4,488 ft.
Seaboard Oil Corp. No. 1 Munger-Nix, sec. 1, Blk. A-4, P.S.L. Sur. Reaming 660 ft.
H. C. Wheeler No. 1 T. M. Gardner, sec. 15, Blk. A-35, P.S.L. Sur. Drlg. 480 ft.

**Bailey County**

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. Tstg. 4,160 ft.

**Brewster County**

F. C. Dodson No. 1 Texas American Synd., sec. 66. Blk. 10, G.H.&S.A. Sur. Drlg. 6,886 ft.
Storey No. 1 Wilson, sec. 3, Blk. 212, T.& St.L. Sur. S.D. 2,545 ft.

**Cochran County**

Devonian Oil Co. No. 1 Duggan, Oldham Co. Sch. Ld. Sur. Tstg. 5,044 ft.
J. R. Meeker et al No. 1 Wright, Mills City Sch. Ld. Drlg. plug 4,930 ft.
P. N. Wiggins et al No. 1 Dean, NE cor. League 58, Martin Co. School Lands. Drlg. 5,035 ft.; prep. acid. 5,077 ft.

**Coke County**

Barnett Pet. Co. No. 1 J. R. Mims, sec. 39 Blk. W, T.&P. Sur. S.D.O. 1,680 ft.
H. E. Ogden et al No. 1 Rawlins, sec. 390 Blk. B-21. S.D. awaiting csg. 2,260 ft.

**Concho County**

Barnett Oil Dev. Co. No. 1 Sims, Abst. 851, Carl Thiele Sur. Loc.

**Cottle County**

F. P. Hinds et al No. 1 Lee, 5 mi. SW of Paducah, A.B.&M. Sur. Cg. 4,385 ft.
Wilcox O. & G. Co. No. 1 Richards et al, sec. 761, Blk. Y, W.&G. Sur. S.D. 275 ft.

**Crane County**

J. W. Hampton No. 1 Thackston, W. L. Wilkinson Sur. S.D. 2,200 ft.

**Crockett County**

Moore Bros. No. 1 Perner, sec. 37, Blk. 2, I.&G.N. Sur. S.D.O. 8,946 ft.
J. N. Simpson No. 1 Hoover, G.C.&S.F. Sur. Tstg. 2,067 ft.
Stewart & Cormas No. 1 Hoover, sec. 1, Blk. FF, B.B. Sur. W.O.C. 1,930 ft.

**Culberson County**

Grisham & Hunter No. 1 fee, sec. 14, Blk. 42, P.S.L. Sur. M.I.S.T.
C. A. Jarrell et al No. 1 C. M. Caldwell, C of SW¼ sec. 15, Blk. 100, P.S.L. Sur. S.D. 507 ft.; H.F.O.; drlg. water well 150 ft.

**Dawson County**

Albaugh No. 1 Robinson, E.L.R.R. Sur. T.D. 5,038 ft.; tstg.
Atlantic No. 1 Scanlan, sec. 83, Blk. M, E.L.R.R. Sur. P.B. from 4,965 ft. to 4,932 ft.

**Dickens County**

C. E. Litchfield No. 1 Harris, sec. 354, Blk. 1, H.&G.N. Sur. Comp.; D.&.A.; T.D. 2,001 ft.
J. F. Morrisey et al No. 1 C. L. Bird, sec. 290, Blk. 1, H.&G.N. Sur. S.D.; W.O. 2,000 ft.

**Ector County**

Bodins et al No. 1 Edwards. Drlg. 4,600 ft.
Wentz Oil Co. No. 1-B Parker. S.D.O. 4,802 ft.; C.O. 800 ft.; O.I.H.
L. H. Wentz Oil Co. No. 1-B Parker. Drlg. 4,335 ft.
Melhoan Drlg. Co. No. 1 Gulf Blakeney. Cg. 4,118 ft.

**Edwards County**

A. P. Carter No. 1 F. D. Sweeten, B.&B. Sur., 2 mi. E of Rock Springs. Drlg. 6,301 ft.
Lyles & Dan Auld No. 1 Henderson, H.E. &W.T. Sur. S.D. 3,200 ft.
Richmond Drlg. Co. No. 1 Brown, G.W. T.&P. Sur. S.D.O. 5,750 ft.

**El Paso County**

Tri-State Oil Co. No. 1 Kinkel. Drlg. 3,524 ft.

**Fisher County**

Daniel & Rhodes No. 1 Nichless, Geo. W. Lawrence Sur. S.D. 3,340 ft.
General Crude Oil Co. No. 1 Morrow, sec. 185, Blk. 2, H.&T.C. Sur. Drlg. 3,-537 ft.
Southern Oil Co. No. 1 Bocat, H.&T.C. Sur. S.D.O. 4,016 ft.

**Floyd County**

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Drlg. 5,065 ft.

**Gaines County**

Amerada Pet. Corp. No. 1 R. W. Robertson, sec. 196, Blk. G, W.T.R.R. Sur. Drlg. 4,892 ft.
Carter, Continental & Plymouth et al No. 1 Geisecke. Drlg. 3,960 ft.
Shell Pet. Corp. No. 1 M. B. Robinson, sec. 344, Blk. G, C.C.S.D.&R.G.N.G. Sur. W.O.C. 4,345 ft.

**Garza County**

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Loc.
M. L. Richards No. 1 Slaughter. T.A. 3,-521 ft.; sulfur wtr. 3,502-21 ft.

**Glasscock County**

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. M.I.S.T.

**Hockley County**

Gulf Oil Corp. No. 1 M. G. Gordon, sec. 12, Blk. X, P.S.L. Sur. Drlg. 15 ft.
Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. Drlg. 20 ft.
Honolulu Oil Co. No. 1-51 Dorthy Slaughter, Labor 51, League 37, Zavalla Co. Sch. Lds. Drlg. 25 ft.
Honolulu Oil Co. No. 1-77, Labor 77, League 37, Zavalla Co. Sch. Lds. Loc.
Sid Richardson No. 1 Slaughter, Maverick Co. Sch. Lds. R.U.S.T. 4,700 ft.
The Texas Co. No. 2 Slaughter, Labour 92, League 37, Zavalla Co. Sch. Lds. Drlg. 4,965 ft.; S.O.

**Howard County**

Lockhart Oil Co. No. 1 Hussinger, sec. 67, Blk. 29, W.&N.W. Sur. Drlg. 1,770 ft.
W. F. McDermott et al No. 1 Lucas, sec. 18, Blk. 29, Twp. 1n, T.&P. Sur., 5 mi. N of Dodge pool. Drlg. 3,077 ft.

**Hudspeth County**

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6. Drlg. 3,640 ft.; O.S. 3,600 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Drlg. 2,627 ft.

**Jeff Davis County**

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,500 ft.

**Lamb County**

Toddle L. Wynne, Tr. No. 1 Naunschwander, Labour 1, League 660, State Cap't. Lds. Drlg. 3,595 ft.

**Loving County**

Barnett Pet. Co. No. 1-A Johnson, sec. 2, Blk. 57, Twp. 1, T.&P. Sur. Drlg. 3,-900 ft.
Carpenter & Grierson No. 1 Mrs. Bennie

Barnes, sec. 22, Blk. C-25, P.S.L. Sur. Loc.
Woodley Pet. Co. No. 1 Klah, T.&P. Sur. S.D.; flwd. 40 B.P.D.; T.D. 3,963 ft.

**Lynn County**

John L. Baldridge No. 1 Alma Lbr. Co., sec. 151, H.E.&W.T. Sur. R.U.R.

**McCulloch County**

Westbrook et al No. 1 Johnson, A. Nevendorf Sur. Drlg. 1,828 ft.
Nixon No. 1 Pierce. S.D. 1,001 ft.

**Martin County**

Harris-Anderson Oil Corp. No. 1 Mollie Robinson, sec. 33, Blk. 38, T.&P. Sur. S.D. 4,189 ft.

**Menard County**

G. A. Clements No. 1 Murchison, sec. 80. B.S.&S. Sur., 8 mi. E of Menard. Set 8-in.; S.D. 460 ft.
C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Spud. and S.D.

**Nolan County**

Marland-Drake Drlg. Co. No. 1 J. H. Withers, sec. 65, Blk. 21, T.&P. Sur. Loc.

**Pecos County**

Harry Baker et al No. 1 White & Baker, sec. 53, Blk. 194, C.C.&S.F. M.I.M.
J. J. Dorr et al No. 2 Payton, sec. 99, Blk. 8, H.&G.N. Sur. Cellar and pits.
Ed Fahey No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. T.D. 2,055 ft.; will dpn.
E. W. Francis et al No. 1-A Westman T.&S.L. Sur. S.D. 2,978 ft.; selling gas to Ft. Stockton.
Magnolia Pet. Co. No. 1 McKee. Set 9-in. 5,294 ft.; W.O.C.S.
Messenger & Osborn No. 1 Humble-Young, sec. 49, Blk. 10, H.&G.N. Sur. Acid. 1,807 ft.; pmpd. 35 B.O. 35 hrs.; S.D.
S. Thompson No. 1 Elsinore Cattle Co sec. 54, Blk. D, G.C.&S.F. Sur. T.D. 7,128 ft.; prep. cg.
Thompson & Minshall No. 1 Michaelson, 660 ft. N and W, sec. 24, Blk. 146, T.& St.L. Sur. S.D. 3,187 ft.
Trans-Pecos Oil Co. No. 1 Gallagher, T.&P. Sur. S.D. 1,610 ft.
Trans-Pecos Oil Co. No. 3-A Papham, G.H.&S.A. Sur. S.D. 1,934 ft.
Wilcox O. & G. Co. No. 1 Serf, sec. 27 Blk. 130, T.&St.L. Sur. Drlg. 1,205 ft.

**Presidio County**

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk 12, G.H.&S.A. Sur. Drlg. new hole from 3,800 ft.

**Reeves County**

Barnett Pet. Corp. No. 1 Ely, sec. 38, Blk. 71, P.S.L. Sur., 12 mi. NW of Toyah. Prep. acd. 4,375 ft.
Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. Lost 8 joints 20-in. csg. 417 ft.

**Runnels County**

E Z Oil Co. No. 1 B. Fletcher, E. C. Good Sur. T.D. 4,394 ft.; P.B. to 4,360 ft.; S.D. 4,381 ft.

**Schleicher County**

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. S.D. 5,004 ft.
Tex-Tor Oil Corp. No. 1 Judkins & Spencer, C of SW¼ sec. 33, Blk. A, A.&B. Sur. Drlg. 5,500 ft.

**Scurry County**

Robinson Drlg. Co. No. 1 Martin, sec 147, H.&T.C. Sur. T.D. 3,515 ft.; P.B. 2,500 ft.; tstg.
T G. Shaw Oil Co. No. 1 First Natl. Bank. Drlg. 3,179 ft.

**Sterling County**

J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. Loc.

**Stonewall County**

General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 1,122 ft.
Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, Blk. D, H.&T.C. Sur. Loc.

**Sutton County**

Ordovician Oil Co. No. 1 Evans, sec. 1, L. Stubblefield Sur., 32 mi. SE of Sonora. Fsg. 4,057 ft.

**Terrell County**

D. & S. Oil Co. No. 1 Sam Bell. S.D. 345 ft

**Terry County**

C H. Hutto No. 1 Brownfield, E.L.R.R. Sur. S.D. 687 ft.

**Tom Green County**

Humble O. & R. Co. No. 1 Lewis & Wardlaw, sec. 5, Blk. 17, H.&T.C. Sur. Drlg. 4,280 ft.
Southern Cross Oil Co. No. 1 J. W. Wilson, sec. 30, Blk. H, A.B.&M. Sur. Loc.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. U.R. 5-in.; T.D. 3,550 ft.

**Upton County**

W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T. Sur. Fsg. 210 ft.
Rutter et al No. 1 Egolb, sec. 5, J. H. Gibson Sur. Blg.; T.D. 3,294 ft.
J. S. Pitman No. 1 D. Elder, C.C.S.D.& R.G.N.G. Sur., Blk. 3, sec. 14. Drlg. salt 2,050 ft.

**Ward County**

Cities Service No. 2 Brandenburg, sec. 4, Blk. 32, H.&T.C. Sur. Prep. run tbg. 2,096 ft.
M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. S.D.O. 3,021 ft.
J. E. Fitzpatrick et al No. 1 H. B. Carr, sec. 125, Blk. 34, H.&T.C. Sur. S.D. 123 ft.; R.U.S.T.
J. E. Fitzpatrick et al No. 1 F. K. Dyer, sec. 135, Blk. 34, H.&T.C. Sur. Drlg. 250 ft.
Hoss & Downey No. 1 Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Drlg. 614 ft.
Hoss & Downey No. 1 Ross Avery, sec 36, Blk. 1, H.&T.C. Sur. Prep. run 8-in. 777 ft.
Patillo & Webster No. 1 Johnson. Drlg. 2,150 ft.
Sayre Oil Co. No. 1 Bertner, sec. 34, Blk. 1, H.&T.C. Sur. Drlg. 60 ft.
O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. Drlg. 160 ft.
H. I. Waid No. 1 Brown Hrs., sec. 34, Blk. 1, H.&T.C. Sur. Drlg. 650 ft.
L. F. White et al No. 1 Rector-Monroe, cor. sec. 3, Blk. 1, W.&N.W. Sur. S.D. 4,710 ft.

**Yoakum County**

Bahago & Bond Oil Corp. No. 1 J. L. West, sec. 607, Blk. D, J. H. Gibson Sur. Cg. 4,965 ft.
Humble No. 1 Abilene State Bank, sec. 37, Blk. AX, P.S.L. Sur. Loc.
Ohio No. 1 Claywater, sec. 638, Blk. D, J.H. Gibson Sur. R.U.R.
Shell No. 1-C Baumgart, sec. 866, Blk. D. J. H. Gibson Sur. Drlg. 3,975 ft.
Texas Co. No. 1 Walker, sec. 794, Blk. D, El. 3,656 ft.; T.D. 5,180 ft.; P.B. 5,162 ft.; S.D. 5,162 ft.
Stogner & Pipkin No. 1 Blade, J. H. Gibson Sur. Tstg. 5,266 ft.

## E. C. TEXAS WILDCATS

**Anderson County**

Humble O. & R. Co. No. 1-C Southern Pine Lbr. Co. Comp.; D.&A.; T.D. 9,155 ft.
H. L. Parsons No. 1 H. B. Hemby, 7 mi NE of Navarro. 21 bbls. dist. and 8,000,000 ft. gas.

**Angelina County**

J. C. Bonham No. 1 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. S.D. 610 ft.
Gar-Flo Oil Co. No. 1 J. L. Russell, J. Morin Sur., 3 mi. E of Dibol. Drlg. 1,500 ft.
Ginter Co. No. 3 Copes Heirs, J. Morin Sur., 4 mi. E of Dibol. R.U.
C. E. Parrott No. 1 J. C. Burres, W. Plucker Sur., 2½ mi. W of Huntington. Drk.

**Bowie County**

Ferguson-Hill No. 1 Breckenridge. S.D. 2,950 ft.
King Oil Corp. No. 1 W. W. Ames, 800 ft S and 1,650 ft. E of J. A. Tolbott Sur 4½ mi. NW of Texarkana. D.S. stuck 3,910 ft.

**Cherokee County**

Grey & Walfe No. 1 Dupree, Lewis Jordan Sur., 2 mi. S of Rusk. Drlg. 2,125 ft.
J. G. Mayo et al No. 1 J. H. Bowlery, W. H. Walters Sur. M.I.M.
Merica Oil Co. No. 1 Cherokee Dev. Co., A. J. Acker Sur., 2 mi. E of Maydelle. M.I.M.

**Dallas County**

Plaza Oil Co. No. 1 Davidson, Marchants Sur., 1 mi. NW of Seagoville. R.U.

**Falls County**

McCleod et al No. 1 F. Bolton, J. R. Cockrill Sur., 4 mi. NW Rosebud. Fsg. 1,708 ft.

**Freestone County**

C. E. Rossiter No. 1 J. P. Fulton in J. P. Fulton Sur., 2½ mi. E of Donie. S.D. 956 ft.

**Grayson County**

Denver Prod. & Ref. Co. No. 1 E. B. Moore, E. Barnes Sur., ½ mi. NW of Whitesboro. Drlg. 200 ft.

**Gregg County**

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi. SW of Longview Trinity test. El. 273 ft.; drlg. 8,156 ft.

**Henderson County**

Howard Pet. Co. No. 1 H. W. Barton, A. J. Allen Sur. S.D. 350 ft.

**Hill County**

J. Willis No. 1 W. P. Ball, S. Marshall Sur., 3 mi. NW of Covington. M.I.M.

**Houston County**

Peyton Bros. No. 1 J. N. Daniels, J. M. Procella Sur., ½ mi. N of Procella. Loc.

**Lamar County**

Cooper Bros. No. 2 L. B. Hayes, L. Roberts Sur. Loc.

**Leon County**

Lone Star Gas No. 1 Sarah Melasky, 1 mi. S of Buffalo pool. R.U. and S.D.

**Limestone County**

C. L. Brown No. 27 N. B. Boyd, R. B Longbotham Sur., 3 mi. S of Wortham T.D. 1,402 ft.; oil sd.; S.D.W.O. 1,455 ft.
J. S. Cosden, Jr. No. 1 J. J. Bower, J. Breeding Sur., near Prairie Hill. Loc.
Pure Oil Co. No. 16-T Kendrick, P. Varella Sur., Mexia field. P.B. from 8,847 ft.; tstg. 5,650 ft.
Stanolind O. & G. Co. No. 1 T. Norris, in Thresher Sur., 5 mi. N of Kosse: 6,500-ft. test; elev. 528 ft.; pipe stuck; T.D. 8,287 ft.

**McLennan County**

Chapman & Kahn No. 1 Carl Hartsman, B. C. Walters Sur., 1½ mi. S of McGregor. Drlg. 773 ft.
Kilgore No. 1 J. M. Marrs, J. S. Rutland Sur., 2 mi. S of Bosque. Drlg. 30 ft.

**Navarro County**

Natural Pet. Co. No. 1 Karen Brown, W. T. Turner Sur., 2 mi. E of Roane. R.U.
Orchard & Biddle No. 1 Gibson, 6 mi. SW of Rural Shade, J. Bird Sur. Pits.
Mrs. Jane Robinson No. 1 Fortson Bros., Eli Smith Sur., 5 mi. NE Corsicana. S.D. 2,216 ft.
L. Sharpe et al No. 1 E. B. McDowell, T. Jordan Sur., 1½ mi. S of Basseta S.D. 3,160 ft.

**Trinity County**

Bilinoski et al No. 1 Trinity State Bnk., B. F. Wright Sur., 2 mi. S of Trinity. S.D. 120 ft.

**Upshur County**

Tom Hunter and American Liberty No. 1 J. P. Carter, J. H. Fields Sur. Drlg. 6,630 ft.
L. & G. Oil Co. No. 1 H. Williams, Roeder Sur., 2 mi. NW of Gracetown. Drlg. 3,752 ft.

## NORTH TEXAS WILDCATS

**Archer County**

Hull & Silk No. 1 L. F. Wilson, sec. 25, A.T.N.C.L. Sur. Loc.
Thos. A. Jirik No. 1 D. L. Wolf, J. Poitevent A-348 Sur. Loc.
Wayne King et al No. 1 C. A. Arthur, sec. 3, G.H.&H. Sur. A-158. Drlg. 210 ft.
Lewis Prod. Co. No. 1 W. C. Frey, sec. 17, P.P.S.L. Sur. Loc.

**Baylor County**

D. S. Kelly No. 1 W. T. Waggoner, sec. 54, T.&N.O. Sur. S.D.O. 1,200 ft.

**Clay County**

Barnett Pet. Co. No. 1 Ben Nutter, sec. 30, Grayson Co. Sch. Lds. Drlg. 2,550 ft.
Healdton O. & G. Co. No. 1 Wallace, Belcher Subd. Drlg. 3,448 ft.
Seitz, Comegys & Seitz No. 1 L. Wright, sec. 2632, T.E.&L. Sur. Drlg. 2,750 ft.
Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. Loc.

**Denton County**

W. C. Curry et al No. 1 G. F. Owens, N Rudder Sur. A-1,060. S.S.O. 1,570-80 ft.; S.D.O.

**Foard County**

Texas Co. No. 14 Johnson, sec. 37, S.P R.R. Sur., Blk. L. Lime 3,760-80 ft.; treating with acid; C.O.

**Jack County**

Auers et al No. 1 Garrison, W.C.R.R. Sur. A-960. Drlg. 400 ft.
Bennett Pet. Corp. No. 1 J. Matlock, sec. 1, B.S.&F. Sur. A-78. S.S.O. 3,070-90 ft.; tstg.
G. M. Gillespie No. 1 A. M. Street, sec. 3339, T.E.&L. Sur. Drlg. 2,310 ft.
Hanlon-Buchanan, Inc., No. 1 Ed M. Myers, N. F. Rudmose Sur. A-1,803. O.S. 3,830-40 ft.; shot with 40 qts.; 2,800 ft. of oil in hole; S.D.O.
O. J. Perrin No. 1 J. S. Rhodes, J. W. Coates Sur. A-1240. Spudded.
Taubert & McKee No. 1 R. H. Eatherly. J. H. Henderson Sur. A-1,749. Spud. and S.D.
Van Eman & Richards No. 1 Whitsell. Wm. McElroy Sur. A-599. Drlg. 3,235 ft.

**Montague County**

Bridwell Oil Co. No. 1 W. W. Radford, M. Burnside Sur. Drlg. 3,585 ft.
H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. Spd. and S.D.
J. W. Sorrell et al No. 1 J. L. Wardall Sam. H. Smith Sur. A-662. S.D.O. 2,720 ft.

**Wichita County**

Geier Bros., Inc., and F. B. Jackson, Jr., No. 1 C. F. Ancell, W.&M. Sur. A-1292. 6⅝-in. 3,960 ft.; repairing spudder.
W. E. Hammon No. 1 Mrs. H. Laik. Blk. 284, W.C.S. Sur. U.R. 10-in. csg.
Tom Medders No. 1 E. Fields, sec. 32, H.&G.N. Sur. Loc.
F. W. Merrick, Inc., No. 1 W. T. Waggoner, sec. 35, H.&T.C. Sur., Blk. 5. Drk.
E. T. Noble No. 1 K. P. Abernathy, sec. 9, T.C.S.L. Sur. A-282. Setting surface csg.
Rathke Oil Co. No. 1 S. B. Burnett "Gulf," sec. 4, H.T.&B. Sur. A-752. 7-in. csg. 3,550 ft.; W.O.C.
E. J. Stump No. 1 M. P. Bishop, L. Netherly Sur. A-240. S.D.O.; S.L. 3,885-3,997 ft.
Joe A. Worsham No. 1 Waggoner Bros., sec. 13. B.S.&F. Sur. A-343. Bkn. slate and O.S. 3,738-3,870 ft.; tstg.; H.F.O.
T. L. Wynne, Tr., No. 1 Waggoner Bros., Lot 36, H. George Sur. 6⅝-in. 3,846 ft.; drlg. 3,910 ft.; S.L. 3,876-86 ft.; tubing est. 700 bbls.

**Wilbarger County**

Barry & Hayes No. 1 McGill, sec. 3, Blk. 9, H.&T.C. Sur. Drlg. 3,380 ft.
Loyd H. Brown No. 1 W. T. Waggoner, sec. 33, Blk. 6, H.&T.C. Sur. Spd.
E. C. Lawson No. 1 Ruitsch, sec. 21, H. &T.C. Sur., Buk 9. R.U.C.T.
T. L. Moore Drlg. Co. No. 1 Mrs. G. E. Blackman, sec. 30, Blk 3, H.&T.C. Sur. Spd.
Phillips Pet. Co. No. 1 W. T. Waggoner "Barger," sec. 11, H.&T.C. Sur., Blk. 14. Drlg. 2,480 ft.
B. R. Rainwater No. 1 J. A. Turkett, Blk. 8, W.C. Sur. Cmt. surf. pipe.

**Young County**

Anzac Oil Corp. No. 1 E. S. Graham, A. Hines Sur. A-135. Pay 3,672-3,775 ft.; C.O. est. 50 bbls.
N. B. Crenshaw No. 1 J. C. Dwight, sec. 1,444, T.E.&L. Sur. S.D. 400 ft.
Howard Pet. Co. No. 1 G. R. Stewart, sec. 84, C.S.L. Sur. Drlg. 1,550 ft.
Kadane-Griffith No. 1 Sanders, sec. 1989, T.E.&L. Sur. Spudding.
L. A. Long No. 1 F. A. Burnett, E. G. Rector Sur. No. A-239. R.U.C.T.

## RANGER (CENTRAL TEXAS) DISTRICT

**Brown County**

H. P. Evans No. 1 J. T. Hall, 2 mi. N of Bangs, 220 ft. from N line and 11,008 ft. from W line of SW¼ sec. 25, H.T. &B.R.R. Sur. Drlg. 710 ft.
R. B. Irving et al No. 1 T. C. Giddings, 390 ft. from S line and 3,382 ft. from W line of J. J. Clelland Sur., 1 mi. E Thrifty. Correct owner was Irving & Prairie Oil Co.; 1,500-ft. test; drlg. 510 ft.

**Callahan County**

Dudley Dev. Co. No. 1 Smith Hrs., 7 mi. NW of Oplin, 1,080 ft. from S line and 620 ft. from W line of W½ of SW¼ sec. 4, S.P.R.R. Sur., Blk. 1. Loc.; 2,200-ft. test.
R. F. Gilman et al No. 1 W. A. Young, 5 mi. NW Clyde, sec. 37, B.B.B.&C. Sur. Drlg. 1,800 ft.
J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains, rotary to 4,000 ft. Loc.
Hal Hughes No. 1 Poindexter, sec. 350, Geo. Hancock Sur., 2 mi. NE of Oplin. Set 7-in. 3,870 ft.; R.U.S.T.
J. C. Jackson et al No. 1 Thompson, 2 mi. S. Eula, sec. 30, B.B.B.&C. Sur. S.D. 1,510 ft.
Phillips Pet. Co. No. 1 Cozart, 1 mi. NW Scranton, M. Cherry Sur. Drlg. 4,046 ft.; est. 4,000,000 ft. of gas at 3,985-95 ft.
R. F. St. John No. 1 A. E. Dyer, 4 mi. NW of Clyde, 1,385 ft. from E line and 1,323 ft. from S line of sec. 40, B.B.B. &C. Sur. Drlg. 2,850 ft.

**Coleman County**

J. F. Brock No. 1 J. R. Livingston, SE cor. SW¼ county, J. D. Waters Sur. No. 208. Drlg. 820 ft.
Vic Eckholm et al No. 1 W. S. Duty et al, 5½ mi. S of Burkett, 220 ft. from N and W lines of SE¼ sec. 25, H.T.&B. Sur. Spud 2,500-ft. test.

**Comanche County**

N. D. Gallagher et al No. 1 Mrs. B. L. Terry, Desdemona pool, N. H. Kuykendall Sur. S.O. in Ellenburger 4,697-4,710 ft.; run tbg. to test.
Dobbs Oil Co. No. 1 Hodges, sec. 11, Blk. 2, H.&T.C. Sur., T.D. 2,710 ft.; acid. 4,000 gal. 2,630-62 ft.; flowing 25 bbls. hourly thru ¼-in. choke.

**Eastland County**

G. D. Chastain et al No. 1 Weddington, 4 mi. N. Cisco, sec. 496, S.P.R.R. Sur. L. 3,315-30 ft.; est. 40 bbls.; drlg. 3,810 ft.
Hickok Prod. & Dev. Co. No. 1 J. E. Donovan, 5 mi. NW of Cisco, 660 ft. from N and E lines of NW¼ sec. 489, S.P. R.R. Sur. Top Ellenburger 4,247 ft.; S.D. to run 6-in.
J. D. Kittrell No. 1 Reynolds, 5 mi. E of Carbon, sec. 23, H.&T.C. Sur., Blk. 1, Prep. to deepen.
Lone Star Gas Co. No. 1 M. Thomas, 5 mi. NW of Cisco, 668 ft. from N line and 660 ft. from E line of SE¼ sec. 478, S.P.R.R. Sur. U.R. 10-in. to 1,775 ft., T.D.
Monark O. & G. Co. No. 1 Downtain, sec. 14 H.&T.C. Sur. Blk. 4, 3 mi. N Eastland. S.D. 2,175 ft.

**Erath County**

J. Hickey et al No. 1 Smith, 5 mi. SE Desdemona, J. B. Smith Sur. Shot with 165 qts. 2,906-3,065 ft. in sd.; S.D.

**Fisher County**

Magnolia No. 1 Joe Howard, 330 ft. from S and W of E 102-ac., SW¼ sec. 185-2, H.&T.C. Sur. R.U.R.
Sunray Oil Co. No. 1 Snowden Lse. (10-ac. tr.), 330 ft. from S line and 1,270 ft. from W line of Sur., 2½ mi. NE of Rotan, H.&T.C. Sur., sec. 185. Drlg. 3,250 ft.

**Haskell County**

Superior Oil Corp. No. 1 T. G. Hendrick, 330 ft. S line, 330 ft. E line, N½ sec. 9, A. Rodriguez Sur., rotary to 3,500 ft. Spudded.

**Jones County**

Bells Wells Oil Co. No. 1 R. L. Pond, 4½ mi. NE Avoca, 330 ft. from S and W lines of NE¼ sec. 165, B.B.B.&C. Sur. Drlg. 3,360 ft.
J. S. Bridwell No. 1 C. L. Carter, 220 ft. from N and E lines SW SE section 37-15, T.&P. Sur. Pits.
Jack Burleson No. 1 T. J. Lotspeich, 220 ft. from S and E lines of sec. 40-15, T.&P. Sur. U.R. 6-in. to 1,751 ft.
Danciger No. 1 Hugh E. Roberts, 220 ft. from S and W lines, E 110-ac., NE¼ sec. 37-15, T.&P. Sur. Pits.
Grisham & Hunter No. 1 E. D. Appling, NW¼ county, 1,208 ft. from S line and 1,450 ft. from W line of SW¼ sec. 32, B.B.B.&C. Sur. Sand 2,640-53 ft.; est. 50 B.O.P.D., 20 B.W.P.D.; drlg. 3,870 ft.
Mack Hayes and Montour Oil Co. No. 1 Chittenden, 7 mi. SE Hamlin, Subd. 18,

McMullen & McGloin Sur. 337. Drlg. up underreamer at 2,722 ft., T.D.

**T. D. Humphrey No. 1 Fielder,** 2½ mi. E Anson, sec. 34, O.A.L. Sur. H.F.W. 3,105 ft.; S.D. for orders.

Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub. 18, Austin Williams Sur. 339. Drlg. 765 ft.

Walter K. Jones No. 1 D. M. Neas, 506 ft. from E and 1,113 ft. from S of Neas 75 ac., D. Bustillos Sur. 189. Set 49 ft. 12½-in.; drlg. 250 ft.

F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1, M.E.&P. Sur. Drlg. 1,700 ft.

Oil States Expl. Co. No. 1 Olson, 4 mi. N Avoca, sec. 182, B.B.B.&C. Sur. S.S. oil 4,820 ft. in Caddo lime; S.S. oil 4,984 ft.; drlg. Chert 5,075 ft.

**Owens-Snebold No. 1 Alice Rhodes,** 4 mi. W of Nugent, 330 ft. from N and W lines of NW¼ sec. 31, T.&P. Sur., Blk. 15. Lost hole 950 ft.; skd. 20 ft. E; U.R. 10-in. at 1,925 ft.

**Roeser & Pendleton No. 1 fee,** 2 mi. NW of Nugent, 2,800 ft. from N line and 3,240 ft. from W line of sec. 4, T.&P. Sur., Blk. 15. U.R. 5-in. from 3,710 to T.D. 3,737 ft.

B. H. Roth No. 1 D. A. Kinney, 4,000-ft. test, 330 ft. from S and E of NW sec. 7-4, H.&T.C. Sur. Spudding.

**Dale Smith & Bert Fields No. 1 C. L. Carter,** 3 mi. SW of Nugent, 220 ft. from N and W lines of SE¼ of SE¼ sec. 37, T.&P. Sur., Blk. 15. T.D. 1,800 ft.; S.O.; shot 20 qts. 1,875-85 ft.; C.O.

**Stanton & Miller No. 1 Gaither,** 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. Drlg. 2,132 ft.

Joe A. Worsham et al No. 1 J. H. Commons, 330 ft. from S and E lines, Steffens Subdiv., Lot 7, A. W. Hill Sur. No. 4, cable. Loc.

### Mills County

**Balyaet & Boyd No. 1 Westbrook,** 7 mi. W of Goldthwaite, 4,950 ft. from S line and 4,290 ft. from W line of Caldwell Co. Sch. Ld. Sur. Drlg. 900 ft.

### Palo Pinto County

**Brazos River Gas Co. No. 5 M. B. Costello B,** 1½ mi. N Pickwick, 1,397 ft. from N line and 150 ft. from W line of survey (W line being river bank), 660 ft. SW No. 4, R. R. Williams Sur. Drlg. 3,100 ft.

**W. H. Clement No. 1 Federal Life Ins. Co.,** 2 mi. W Mineral Wells, sec. 51, T.&P. Sur., Blk. A (E of B). Drlg. 1,510 ft.

**Bill Cole et al No. 1 J. W. Harris Est.,** NW cor. county, De La Garza Sur. Drlg. 910 ft.

**W. K. Gordon et al No. 1 Johnson,** 5 mi. N Gordon, John Bird Sur. Drlg. 3,550 ft.

**Henry Hobbs et al No. 1 Bessie Holt,** 4 mi. S. Graford, sec. 1,783, T.E.&L. Sur. S.D. 200 ft.

**King Oil Co. No. 1 S. F. Lee,** 4 mi. NW Graford, 933 ft. from N and W lines of sec. 1,744, T.E.&L. Sur. Drlg. 3,985 ft.

**Ernest Lloyd et al No. 1 McClure,** 3 mi. NE Graford, sec. 2,004, T.E.&L. Sur. S.D. 1,200 for csg.

### Shackelford County

Danciger No. 2 J. E. McCown, 330 ft. from S and E sec. 158, B.B.B.&C. Sur., N offset to Haterius. Spudded.

**Joe DeGrazier No. 1 Harbough,** E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test; S.D. 360 ft.

**Forest Dev. Corp. No. 1 T. G. Hendrick,** NW cor. of county, 2,600 ft. from N line and 4,300 ft. from W line of sec. 1, A.B.&M. Sur. Est. 15,000,000 ft. gas per day 1,603-17 ft.; gas 1,662-65 ft., incr. est. 4,000,000 ft., 1,680-85 ft. T.D.; U.R. 8-in. from 1,646 ft.

Hugh King, Jr., et al No. 2 Davis-Walker, sec. 55-13, T.&P. Sur. S.S.O. 3,427-32 ft.; drlg. 3,450 ft.

**T. D. Humphrey No. 1 Alston,** NE cor. county, sec. 16, H.&T.C. Sur., Blk. 3 S.S. oil 3,243-55 ft., T.D.; acid., 2,000 gallons.; H.F.W. from T.D. 3,255 ft.; plugging.

**Iron Mountain Oil Co. No. 1 E. O. Beck,** NW cor. county, 300 ft. from S line and 290 ft. from W line of sec. 162, B.B.B. &C. Sur. Spudded.

**C. J. Kleiner et al No. 1 Morris,** 2 mi. NE Bluff Creek pool, sec. 187, E.T.R.R. Sur. Drlg. 2,065 ft.

**Owens-Snebold Oil Corp. No. 1 Haterius,** sec. 163, B.B.B.&C. Sur. 6-in. to 3,192 ft.; squeeze 3,192-3,211 ft.; T.D. 3,218 ft.; trtd. 2,000 gal. acid; flowed 845 bbls.; est. 15% wtr.; completed.

R. C. Parker No. 1 J. Smalley, NW cor. of NE¼ county, 1,245 ft. from N line and 1,260 ft. from E line of sec. 11, E.T.R.R. Sur. Spd.

### Stephens County

Danciger Oil Ref. Co. No. 1 Mrs. Aileen Copeland, 8 mi. SE Ivan, 1,196 ft. from E line and 350 ft. from S line of sec. 1, M.E.P.&P. Sur. Drlg. 1,600 ft.

Graham, Hafner, Lane & Inman No. 1 J. N. Yocum, 5 mi. SE of Frankell, 250 ft. from N and E lines of farm or approx. 2,525 ft. from E line and 1,400 ft. from S line of John R. Carter Sur. S.D. 250 ft.

**L. C. Little No. 1 R. M. Rogers,** NE¼ of county, 150 ft. from E line and 1,980 ft. from S line of sec. 28, T.&P. Sur., Blk. 5. Setting 7-in. to 3,860 ft. to test gas est. at 2,000,000 ft.

**G. Willard Rich No. 1 M. M. Andrews,** SW cor. county, 450 ft. from S line and 300 ft. from W line of N½ sec. 39, T. &P. Sur., Blk. 7. Loc.; 4,500-ft. test.

### Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, SW cor. county, 330 ft. from S and E lines of sec. 371, H.&T.C. Sur., Blk. 2. Drlg. 1,225 ft.

F. B. Parriott No. 1 H. T. Carille, 330 ft. from S line, 990 ft. from E line, SW¼ NE¼ sec. 293, Blk. D, H.&T.C. Sur., rotary to 5,500 ft., 6 mi. NW of Swenson. R.U.R.

### Tarrant County

**E. E. Hoffpauir et al No. 2 W. H. Davis,** 2 mi. S Arlington, H. Blackwell Sur. S.D.O. 2,140 ft.

### Taylor County

**Dr. W. C. Braham et al No. 1 Ernest Armstrong,** 3½ mi. E of Abilene, 220 ft. from S line and 330 ft. from W line of NE¼ SE¼ sec. 40, B.A.L. Sur. S.D. 800 ft.

**Bert Fields et al No. 1 Sears,** sec. 223, Blk. 64, H.&T.C. Sur. S.D. 1,530 ft.

**A. Findley No. 1 Bowles Est.,** NE cor. county, sec. 26, B.A.L. Sur. Tstg. 1,873-80 ft.

### Throckmorton County

Humble O. & R. Co. No. 1-A Reynolds Cattle Co., 330 ft. from S and E lines, sec. 7-2, A.B.&M. Sur. Drlg. sh. 1,752 ft.

**Morris & Spoonts No. 1 Alden Bros.,** NW cor county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Drlg. 610 ft.

**Henry Zweifel No. 1 J. H. Lee,** 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. Drlg. 400 ft.

### Wise County

**Latex Oil Co. No. 1 Smith,** 3 mi. E of Bridgeport, Jas. Couch Sur. T.D. 4,075 ft.; P.B. to 3,910 ft.; drlg. plug.

## Rocky Mountain Runs

Production estimates for week ended January 29, follow:

### WYOMING

| | Bbls. |
|---|---|
| Salt Creek | 15,990 |
| Big Muddy | 1,260 |
| Badger Basin | 250 |
| Byron | 2,850 |
| Dallas Derby | 560 |
| Dutton Creek | 40 |
| Elk Basin | 20 |
| Frannie | 90 |
| Garland | 2,290 |
| Hidden dome | 200 |
| Hudson | 290 |
| La Barge | 1,010 |
| Lance Creek | 11,820 |
| Lost Soldier | 1,450 |
| Medicine Bow | 3,570 |
| Midway | 50 |
| Oregon Basin | 1,780 |
| Osage | 690 |
| Pilot Butte | 20 |
| Quealy dome | 840 |
| Rock River | 2,110 |
| South Casper | 490 |
| Poison Spider | 390 |
| Teapot | 40 |
| Warm Springs | 20 |
| Wertz | 700 |
| Waugh dome | 240 |
| Total Wyoming | 48,970 |

### MONTANA

| | |
|---|---|
| Border | 20 |
| Cat Creek | 610 |
| Cut Bank | 7,770 |
| Dry Creek | 470 |
| Kevin-Sunburst | 3,830 |
| Pondera | 1,080 |
| Total Montana | 13,780 |

### COLORADO

| | |
|---|---|
| Florence | 150 |
| Fort Collins-Wellington | 260 |
| Iles dome | 2,650 |
| Moffat | 370 |
| Orchard | 30 |
| Rangely | 110 |
| Tow Creek | 140 |
| Price | 510 |
| Total Colorado | 4,220 |

### NEW MEXICO

| | |
|---|---|
| Cooper | 5,280 |
| Eaves | 1,010 |
| Eunice | 27,540 |
| Hardy | 1,660 |
| Hobbs | 16,380 |
| Jal | 1,280 |
| Langlie | 3,130 |
| Lynch | 650 |
| Lynn | 640 |
| Mattix | 2,600 |
| Monument | 28,840 |
| North Lynch | 60 |
| Penrose | 4,750 |
| Rhoades | 140 |
| Skelly | 1,830 |
| South Eunice | 2,510 |
| Vacuum | 380 |
| Artesia-Maljamar | 7,160 |
| Getty | 200 |
| Hogback | 200 |
| Rattlesnake | 820 |
| Table Mesa | 100 |
| Total New Mexico | 107,160 |
| Total Rocky Mountains | 174,130 |


# ANNOUNCEMENT

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# MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

## New York Stock Exchange

| 1938 High | 1938 Low | Week ending Jan. 29 Sales | Week ending Jan. 29 High | Week ending Jan. 29 Low | Week ending Jan. 29 Close | Stocks— | Total shares outstanding | Par value | Latest dividend | Payable or last paid | Dividends paid in 1936 | 1937 High | 1937 Low | 1936 High | 1936 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 68½ | 59 | 3,300 | 65¾ | 59 | 59 | Amerada Corp. | 788,675 | N.P. | 50cQ | 10-30-37 | $2.00 | 114⅞ | 51½ | 125½ | 75 |
| 22¼ | 20 | 9,000 | 21½ | 20½ | 21 | Atlantic Refining | 2,664,000 | $25 | 25cQ | 12-15-37 | 1.25 | 37 | 18 | 35⅛ | 26⅝ |
| 18 | 14⅜ | 6,000 | 16¾ | 14⅛ | 15 | Barber Co. | 387,149 | $10 | 75c | 12-16-37 | .50 | 43⅜ | 10⅛ | 38½ | 21 |
| 16⅛ | 13 | 16,200 | 14¾ | 13⅛ | 13⅛ | Barnsdall Oil Co. | 2,247,974 | $5 | 25cQ | 2-1-38 | .80 | 35¼ | 10 | 28¼ | 14⅛ |
| 10½ | 8¾ | 16,800 | 10 | 8¾ | 9 | Consolidated Oil Corp. | 13,919,417 | N.P. | 20cQ | 2-15-38 | .80 | 17⅞ | 7 | 17¼ | 11½ |
| 34⅜ | 28⅛ | 15,100 | 31⅛ | 28⅛ | 28¼ | Continental Oil of Delaware | 4,682,615 | $5 | 25cQ | 12-20-37 | 1.50 | 49 | 24 | 44⅞ | 28⅛ |
| 8⅞ | 6¼ | 14,300 | 7⅝ | 6½ | 6⅝ | Houston Oil (new) | 1,098,618 | $25 | .... | 10-17-30 | .... | 17⅝ | 4⅝ | 13⅞ | 6⅜ |
| 22⅝ | 17⅛ | 5,300 | 19⅝ | 17⅛ | 17½ | Mid-Continent Petroleum | 1,855,912 | $10 | $1 | 11-1-37 | 1.15 | 35⅝ | 14 | 30⅞ | 17¼ |
| 17¾ | 14⅜ | 1,500 | 16½ | 14⅜ | 14⅜ | Mission Corporation | 1,399,345 | N.P. | 25c | 12-24-37 | .45 | 34 | 15 | 29⅞ | 16⅜ |
| 22½ | 16½ | 7,000 | 19¼ | 16½ | 17⅛ | National Supply | 382,591 | $25 | $2 pf.‡ | 12-22-37 | .... | 41⅜ | 17⅝ | 75½ | 19⅞ |
| 14⅞ | 11⅞ | 13,800 | 13½ | 12⅛ | 12¼ | Ohio Oil Co. | 6,563,377 | N.P. | 50cSA | 12-15-37 | .60 | 22⅞ | 9 | 18 | 12⅛ |
| 15⅞ | 11¾ | 1,000 | 13 | 11¾ | 11¾ | Pacific Western Oil | 1,000,000 | N.P. | 65c | 12-18-36 | .65 | 29¾ | 11¾ | 23½ | 11¾ |
| 8⅝ | 8¼ | No sales | .. | .. | .. | Pan American Pet. & Trans. | 4,702,945 | $5 | $1* | 12-21-37 | .60* | 17⅛ | 7 | 20⅝ | 12¼ |
| 62½ | 34¾ | 25,100 | 39⅝ | 34¾ | 36½ | Phillips Petroleum | 4,449,052 | N.P. | 50cQ | 3-1-38 | 2.50 | 64 | 30⅛ | 52⅜ | 38⅛ |
| 19¼ | 16¾ | 4,600 | 18¾ | 16¾ | 16¾ | Plymouth Oil Co. | 1,050,000 | $5 | 35cQ | 9-30-37 | .90 | 29⅞ | 13 | 27¾ | 11⅞ |
| 13½ | 10⅝ | 39,500 | 12¼ | 10⅝ | 10¾ | Pure Oil Co. | 3,281,120 | N.P. | 25c | 12-1-37 | .... | 24⅝ | 8¾ | 24⅞ | 16 |
| 7⅞ | 5⅜ | 8,500 | 7 | 6 | 6⅛ | Richfield Oil Corp. | 3,986,638 | N.P. | 25c | 12-24-37 | .... | 6½ | 4⅛ | .. | .. |
| 25⅜ | 20 | 3,800 | 22½ | 21 | 21¼ | Seaboard Oil of Delaware | 1,224,283 | N.P. | 25cQ | 9-15-37 | 1.00 | 54⅛ | 16 | 44 | 30½ |
| 18¼ | 15⅜ | 5,400 | 17 | 15⅜ | 15¾ | Shell Union Oil | 13,070,625 | N.P. | 50c | 12-20-37 | .25 | 34¾ | 14⅞ | 28¼ | 14¾ |
| 34⅜ | 25⅛ | 3,400 | 28 | 25⅛ | 25¼ | Skelly Oil | 1,006,348 | $15 | 50c | 9-30-37 | .... | 60⅝ | 26½ | 47⅜ | 19½ |
| 16⅜ | 13¾ | 50,500 | 15¾ | 13¾ | 14¼ | Socony-Vacuum | 31,151,071 | $15 | 30c | 12-15-37 | .70 | 23¼ | 13 | 17½ | 12½ |
| 33⅞ | 28⅝ | 14,300 | 32 | 29⅝ | 29⅝ | Standard Oil of California | 13,014,754 | N.P. | 80cQ† | 12-15-37 | 1.20 | 50 | 27⅛ | 47⅝ | 35 |
| 35½ | 32½ | 11,500 | 34¼ | 32½ | 32½ | Standard Oil (Indiana) | 15,196,241 | $25 | $1Q† | 12-15-37 | 2.40 | 50 | 26½ | 48½ | 32¾ |
| 34 | 34 | 200 | 34 | 34 | 34 | Standard Oil of Kansas | 134,841 | $10 | $5 | 12-20-37 | 1.00 | 43 | 30⅝ | 31 | 25 |
| 51 | 44½ | 27,200 | 49⅝ | 46⅛ | 46⅛ | Standard Oil of New Jersey | 25,856,081 | $25 | $1.25SA† | 12-15-37 | 2.00 | 76 | 42 | 70⅜ | 51⅛ |
| 57 | 49¾ | 900 | 57⅞ | 50 | 50 | Sun Oil | 2,156,825 | N.P. | 25cQ | 3-15-38 | $1 & 6% Stk. | 77½ | 44½ | 91 | 70 |
| 3⅜ | 2½ | 10,200 | 3 | 2½ | 2½ | Superior Oil Corp. | 1,388,079 | $1 | .... | ..... | .... | 7¾ | 1½ | 6¾ | 3 |
| 44⅞ | 37¼ | 35,000 | 42 | 37¼ | 37¾ | Texas Corp. | 10,896,858 | $25 | 50cQ | 1-2-38 | 1.50 | 65⅛ | 34¾ | 55¼ | 28⅞ |
| 4⅞ | 3⅝ | 4,200 | 4⅛ | 3⅝ | 3⅝ | Texas Gulf Producing Co. | 888,134 | N.P. | 10c | 12-23-37 | .05 | 9⅝ | 2 | 8⅞ | 4⅜ |
| 9½ | 7¾ | 9,100 | 9 | 8 | 8⅛ | Texas Pacific Coal & Oil | 888,237 | $10 | 10c | 3-1-38 | .25 | 16⅝ | 5⅜ | 15¼ | 7½ |
| 15½ | 13⅛ | 14,000 | 14⅝ | 13⅛ | 13⅜ | Tide Water Associated | 6,288,512 | N.P. | 15c Spl. | 12-17-37 | .70 | 21⅝ | 13⅛ | 21¾ | 14¾ |
| 21¼ | 18½ | 4,700 | 20⅝ | 19⅛ | 19⅜ | Union Oil of California | 4,386,070 | $25 | 30cQ | 2-10-38 | 1.00 | 28¼ | 17½ | 28½ | 20⅜ |
| 23½ | 22 | 400 | 22¾ | 22 | 22½ | Union Tank Car Co. | 1,200,000 | N.P. | 40cQ | 12-1-37 | 1.20 | 31½ | 22 | 31⅝ | 22⅝ |
| 2⅝ | 2¼ | 200 | 2⅝ | 2½ | 2½ | Wilcox Oil & Gas | 424,839 | $5 | .... | 5-10-28 | .... | 6¼ | 1¾ | 5¼ | 2⅜ |

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

## New York Curb Exchange

| 1938 High | 1938 Low | Week ending Jan. 29 Sales | Week ending Jan. 29 High | Week ending Jan. 29 Low | Week ending Jan. 29 Close | Stocks— | Total shares outstanding | Par value | Latest dividend | Payable or last paid | Dividends paid in 1936 | 1937 High | 1937 Low | 1936 High | 1936 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9⅜ | 7¼ | 5,500 | 8½ | 7¼ | 7¼ | American Republics Corp. | 1,308,049 | $10 | 30c | 12-27-37 | .... | 10 | 6⅝ | .. | .. |
| 10¼ | 8⅝ | 1,300 | 9½ | 8½ | 8½ | Bridgeport Machine Co. | 260,000 | N.P. | 1.25 | 12-30-37 | $1.00 | 21⅜ | 7 | 21 | 13¼ |
| 39 | 35 | 600 | 38 | 35 | 37 | Buckeye Pipe Line Co. | 200,000 | $50 | 75cQ | 3-15-38 | 3.25 | 51½ | 36 | 50 | 39¾ |
| 102½ | 100 | 50 | 102½ | 102½ | 102½ | Chesebrough Mfg. Co. | 120,000 | $25 | $1.50Q† | 9-30-37 | 7.00 | 123 | 95½ | 124¾ | 105 |
| 2 | 1¾ | 25,400 | 2 | 1¾ | 1⅞ | Cities Service | 37,804,394 | N.P. | .... | 6-1-32 | .... | 5⅜ | 1½ | 7⅜ | 3 |
| 2⅜ | 1⅝ | 3,400 | 2 | 1⅝ | 1⅝ | Cosden Petroleum | 399,687 | $1 | .... | ..... | .... | 5½ | 1½ | 4½ | 1½ |
| 27½ | 22¾ | 7,800 | 25⅝ | 22¾ | 22¾ | Creole Petroleum | 6,974,356 | $5 | 50cSA† | 12-15-37 | .50 | 38¾ | 20¼ | 39 | 19⅞ |
| 8¾ | 7 | 600 | 7¼ | 7 | 7 | Darby Petroleum | 351,390 | $5 | 25cSA | 1-15-38 | .50 | 18⅝ | 6½ | 18⅛ | 9 |
| 3½ | 2⅝ | 1,100 | 3 | 2⅝ | 2⅝ | Derby Oil & Refining | 263,162 | N.P. | .... | ..... | .... | 8⅜ | 2¼ | 6¾ | 1⅞ |
| 31 | 31 | No sales | .. | .. | .. | Eureka Pipe Line | 50,000 | $50 | $1Q | 11-1-37 | 4.00 | 47½ | 24½ | 47½ | 38½ |
| 41¾ | 37½ | 7,200 | 41 | 37½ | 38 | Gulf Oil Corp. | 9,076,202 | $25 | 25cQ | 12-1-37 | 1.50, 100% Stk. | 63½ | 33 | 59 | 36 |
| 66½ | 60 | 6,700 | 66 | 60 | 60 | Humble Oil & Refining | 8,923,935 | N.P. | 62½cQ | 12-27-37 | 1.50 | 87 | 54⅞ | 80 | 57 |
| 18⅞ | 17⅞ | 1,500 | 18⅞ | 18⅛ | 18⅛ | Imperial Oil of Canada | 26,919,871 | N.P. | 62½cSA†‡ | 12-1-37 | 1.25 | 24¼ | 14½ | 24½ | 19¾ |
| 7½ | 6⅝ | 300 | 7 | 6⅝ | 6⅝ | Indiana Pipe Line | 300,000 | $10 | 50cSA | 11-15-37 | .80 | 15 | 5⅞ | 9¾ | 5½ |
| 30⅝ | 28½ | 4,300 | 30⅛ | 29⅜ | 29⅛ | International Petroleum | 14,247,088 | N.P. | $1.25†‡ | 12-1-37 | 2.50 | 39½ | 23½ | 39⅝ | 32⅝ |
| 4¼ | 3¼ | 700 | 3¾ | 3½ | 3⅝ | Kirby Petroleum Co. | 500,000 | $1 | 10c | 9-15-37 | .20 | 8¾ | 2⅝ | 5¾ | 2⅝ |
| 25⅛ | 18¾ | 7,300 | 23½ | 19½ | 20½ | Lion Oil Refining | 270,000 | N.P. | 50cQ† | 12-24-37 | .75 | 34 | 12½ | 17⅝ | 7⅝ |
| 9¼ | 7⅛ | 5,000 | 8⅝ | 7¾ | 7¾ | Lone Star Gas | 5,382,723 | N.P. | 20c | 12-22-37 | .60 | 14¼ | 5¼ | 14¼ | 9⅞ |
| 9⅜ | 8⅛ | 5,900 | 9⅛ | 8¼ | 8½ | Louisiana Land & Exp. | 3,000,000 | N.P. | 20cQ† | 12-15-37 | .50 | 15¼ | 6¾ | 15⅝ | 9⅞ |
| 7⅝ | 7 | 900 | 7⅜ | 7 | 7 | Midwest Oil Co. | 998,444 | $10 | 50c | 12-15-37 | .... | 14⅝ | 6¼ | .. | .. |
| 5 | 4⅝ | 700 | 5 | 4⅞ | 4⅞ | Mountain Producers | 1,682,182 | $10 | 30cSA | 12-15-37 | .60 | 7⅞ | 4⅛ | 8⅝ | 5 |
| 14⅝ | 13 | 2,400 | 13¾ | 13 | 13¾ | National Fuel Gas | 3,810,183 | N.P. | 25cQ | 1-15-38 | 1.00 | 19½ | 12 | 23 | 17⅜ |
| 9¼ | 8 | 200 | 8⅛ | 8 | 8 | National Transit | 509,000 | $12.50 | 55cSA | 12-15-37 | .75 | 12½ | 7¼ | 15¾ | 9¼ |
| 2⅝ | 1¾ | 100 | 1⅞ | 1⅞ | 1⅞ | New Mexico and Arizona | 1,000,000 | $1 | 1c | 12-1-36 | .01 | 5 | 1⅛ | 6⅝ | 1⅝ |
| 4½ | 4 | No sales | .. | .. | .. | New York Transit | 100,000 | $5 | 60c Spl. | 12-28-37 | .35 | 5⅜ | 3⅞ | 6¼ | 4¼ |
| .. | .. | No sales | .. | .. | .. | Northern Pipe Line | 120,000 | $10 | 25cSA | 12-1-37 | .40 | 12⅜ | 5⅜ | 9⅜ | 4⅞ |
| 7 | 5⅜ | 16,700 | 6¼ | 5⅜ | 5⅜ | Pantepec Oil | 1,608,700 | N.P. | .... | ..... | .... | 9⅝ | 2¾ | 10⅛ | 3¼ |
| 3⅜ | 3 | 1,700 | 3⅜ | 3 | 3⅛ | Root Petroleum Co. | 336,045 | $1 | 25c | 2-1-37 | .50 | 13⅜ | 2 | 19¼ | 4½ |
| 4 | 3⅛ | 500 | 3⅝ | 3¼ | 3¼ | Ryan Consolidated | 296,931 | N.P. | .... | ..... | .... | 6½ | 2¼ | 4¾ | 1⅞ |
| 5⅜ | 4⅝ | 300 | 4⅝ | 4¼ | 4½ | Southern Pipe Line | 100,000 | $10 | 15cSA | 3-1-38 | .25 | 7¼ | 3⅞ | 7⅞ | 3¼ |
| 38½ | 37¼ | 300 | 37½ | 37¼ | 37¼ | South Penn Oil | 1,000,000 | $25 | $1.15Q† | 12-28-37 | 2.60 | 56 | 35 | 44 | 32½ |
| 22 | 22 | No sales | .. | .. | .. | Southwest Penna. Pine Lines | 35,000 | $50 | 50cQ | 12-31-37 | 13.00 | 42 | 20 | 60 | 44 |
| 18 | 17 | 1,800 | 17¾ | 17¼ | 17½ | Standard Oil of Kentucky | 2,604,790 | $10 | 40cQ† | 9-15-37 | 1.35 | 21⅛ | 14¾ | 23⅜ | 17⅛ |
| 7½ | 7¼ | 200 | 7½ | 7¼ | 7½ | Standard Oil of Nebraska | 188,403 | $25 | 25c | 3-29-37 | .25 | 13¾ | 8 | 14⅝ | 11 |
| 22 | 19 | 700 | 20¾ | 19 | 19 | Standard Oil of Ohio | 753,740 | $25 | 75cQ† | 12-15-37 | 2.00 | 45 | 16 | 40 | 21¾ |
| 3¼ | 2⅞ | 8,300 | 3⅛ | 2⅞ | 3 | Sunray Oil | 1,910,119 | $1 | 10c | 12-24-37 | .10 | 4⅞ | 2 | 5 | 2⅝ |
| 4⅜ | 4 | 800 | 4⅛ | 4 | 4 | Texon Oil & Land | 336,028 | $2 | 15cQ | 1-3-38 | .60 | 7⅝ | 2 | 9¾ | 5⅜ |
| 5¼ | 4¼ | 26,300 | 4½ | 3½ | 3½ | United Gas Corp. | 7,818,959 | $1 | 10c | 9-15-37 | .20 | 13⅝ | 3 | 10¾ | 4 |

†Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

# PERSONAL

A. J. BRODERICK, Fort Worth, Tex., oil operator, has returned home after several weeks' vacation in Florida.

CAPT. E. VAN PRAY, now on shore duty in Texas, will command Atlantic Refining Company's new 18,500-ton tanker, the "J. W. Van Dyke," when the vessel is commissioned in February.

JOE CHALMERS, former field superintendent for the Shell Petroleum Corporation in the East Texas field, returned to Kilgore from The Hague last week for a brief stay. Formerly petroleum engineer in the field with Shell, Mr. Chalmers was called to The Hague recently, and he will go back for a lengthy assignment.

STANLEY GILL, consulting petroleum engineer, Houston, Tex., is recovering from injuries, including a broken rib, suffered in a recent automobile accident.

WARD KELLY, chief mud technician for General Petroleum Corporation, has been transferred from Ventura, Calif., to the Wilmington field, where he will be concerned with drilling problems.

KIICHI MIYAKE, of the Tokyo Imperial University, was guest speaker before the Chicago Oil Men's Club last Friday. He described conditions in the Far East from the Japanese standpoint.

A. J. HOLLAND, chief engineer for the Texas Company in the Panhandle district at Pampa, Tex., has been named chairman of the general committee in charge of arrangements for the spring convention of the Mid-Continent A.P.I. chapter to be held in Amarillo on February 17 and 18.

W. H. FLOOD, JR., and HEATH RENFROW, formerly in the engineering department of the Texas Railroad Commission in Kilgore, Tex., have been transferred to the commission's office in the Wichita Falls district, where they will assist in pressure and gas-oil ratio tests in the K.M.A. field.

R. OGARRIO, vice president in charge of production for the Texas Corporation, and JAMES TERRY DUCE, manager of the Texas Petroleum Company, both of New York, sailed January 28 for Colombia, where they will inspect properties. The Texas Petroleum Company is a wholly owned subsidiary of the Texas Corporation, owning concessions in Colombia. The Texas Corporation has a 50 per cent interest in the Colombian Petroleum Company, with Socony-Vacuum holding the other half.

B. J. LINDSAY, Michigan and Canadian operator, who has extensive holdings in western Kansas and in Oklahoma, is recuperating from a major operation in Rio Grande, Tex. He is expected to be out of the hospital within 30 days. In the meantime his business is being looked after by SAMUEL BELFORD, of London.

R. G. COCANOWER has resigned as manager of the Waggoner Refining Company's plant in Electra, Tex. C. A. HODGES, formerly associated with the company, has been named to succeed him, and he has assumed his new duties at the company's headquarters in Vernon, Tex. Mr. Cocanower, who did not announce his plans for the future, has gone to Trinidad, Colo.

CHESTER L. KLUCK has been named New York city manager for the Shell Union Oil Corporation. Mr. Kluck will be assisted by WILLIAM E. JOHNSON as sales supervisor for Brooklyn and LEE HIRSHFIELD as sales supervisor for Manhattan and Queens. GILBERT V. WALSH has been appointed Port Washington area manager. A native of Lawton, Okla., Mr. Kluck is a graduate of the University of California.

W. P. DURKEE, for many years prominent in the petroleum industry on the Pacific Coast, has announced his resignation as vice president in charge of marketing for the Shell Oil Company, effective April 1. Mr. Durkee will enter private business, forming a partnership with W. C. VAN FLEET, with whom he formerly was associated in the operation of a coast-wide chain of service stations. The old name of Van Fleet & Durkee will be revived, and the firm will have its headquarters in Los Angeles, where Mr. Durkee will reside.

CECIL DARNELL, geological scout for the Sinclair Prairie Oil Company at Wichita Falls, has been transferred to the company's district office at Eastland, West Central Texas.

F. G. STODDER, oil operator of Wichita, Kans., has been named chairman of the membership campaign started by the Kansas Independent Oil and Gas Association.

T. R. BATTE, general superintendent of the Gulf Coast division for the Continental Oil Company in Houston, Tex., has returned to his desk after an extended business trip through Mexico.

W. R. FINNEY, president of the Oklahoma Pipe Line Company, has been appointed chairman of the pipe line committee of the International Petroleum Exposition, to be held in Tulsa next May. In addition to other duties, the committee will have charge of "Pipe Line Day" at the exposition.

S. C. MAXWELL, of the Humble Oil & Refining Company, was injured last week when a regulator blew up, destroying the left eye and endangering the right. The accident occurred in the East Texas field. Mr. Maxwell is in the Overton hospital and will be moved to his home in Houston, Tex., as soon as his condition permits.

R. W. CARNEY, vice president of the Coleman Lamp & Stove Company, Wichita, Kans., told the Minnesota division of the Northwest Petroleum Association in Minneapolis last Friday how the oil industry is improving farm living standards and operating methods. He described the use of oil fuel for stoves and lamps and essential farm machinery. He said farmers, though they have advanced rapidly in use of power machinery, offer an even greater market for petroleum products.

## Do You Remember?

From The Oil and Gas Journal Files

### 25 YEARS AGO

*L. C. Hivick and Owen & Wilson wager a big oyster banquet on which would first "strike oil" in tests they were drilling on the Ferguson land in North Texas. Mr. Hivick loses and gives a big party at B. N. Ferguson's home south of Iowa Park.*

*The first barge-load of crude oil ever shipped from Orange, Tex., consisted of 21,175 barrels of oil produced in the Vinton field and sent to market last week by the Gulf organization, which plans to ship a barge every 19 hours.*

*Earl Sinclair, of Independence, Kans., recently made a director in the Exchange National Bank of Tulsa, has decided to build a home in the latter city because he cannot otherwise find a place into which to move his family.*

### 20 YEARS AGO

*Lease owners in the Osage Nation in Oklahoma have organized to protect their interests, being dissatisfied with governmental restrictions in that area. Frank Breene, of the Winona Oil Company, is chairman of a committee that will try to effect better conditions.*

*President Wilson issues a proclamation putting under license manufacturers and distributors of fuel oil with an output of more than 100,000 barrels per year. It is a war measure. The movement of the oil will be under the direction of Mark L. Requa, director of the U. S. Fuel Administration.*

### 10 YEARS AGO

*Capt. John Tonkin, veteran oil and gas man, has resigned as president of the Central Kentucky Natural Gas Company and retired. Captain Tonkin was an officer in the Confederate army, but hurried off to the Pennsylvania oil regions when the war was over and at once got into the then infant industry.*

*Joe Cromwell and Wirt Franklin are drilling the deepest well in Oklahoma, a cable-tool test, in section 15-13-3w, north of Oklahoma City. It is 6,780 feet deep.*

# PARAGRAPHS

FRANK H. DEWEY was appointed president of the Oil Burner Institute, at a meeting of the board of directors of the institute in New York. Mr. Dewey, who is manager of the air-conditioning division of Gar Wood Industries, Inc., Detroit, Mich., will fill the unexpired term of CHARLES M. LOCKWOOD, of Rock Island, Ill., who resigned.

C. A. WARNER, Houston Oil Company, has been elected chairman of the Gulf Coast section of the A.I.M.E. R. N. POSGATE, Shell Petroleum Corporation, was named vice chairman, and ALEXANDER DUESSEN, consulting geologist, secretary-treasurer. Directors chosen are HAROLD VANCE, professor of petroleum engineering, Agricultural and Mechanical College, Bryan, Tex.; F. B. PLUMMER, professor of petroleum engineering, University of Texas, Austin; GEORGE NYE, Tide Water Associated Oil Company, Houston, and E. H. McFARLAND, Freeport Sulphur Company, Houston.

FRITZ MUELLER, geologist for Skelly Oil Company, Houston, Tex., has left for Santa Domingo, where his company is undertaking an oil development program.

WARD KELLY, chief mud technician for General Petroleum Corporation in the Rocky Mountain Division, has returned to his office at Casper, Wyo., after a three weeks' stay in Los Angeles.

EDWARD McMAHON, superintendent for the Standard Oil Company of California's pipe line department at Taft, Calif., has retired from service after 30 years in the employ of the company.

FRANK DUNN, general superintendent of gathering lines for the Houston Oil Company, Houston, Tex., has returned from New York, where he was called by the serious illness of his mother, now recovering.

S. W. HARDISON, manager of production for General Petroleum Corporation in the Rocky Mountain division, has returned to his office at Casper, Wyo., after a three weeks' stay in Los Angeles, Calif.

WALTER G. BLACK has been appointed general manager of the Standard Oil Company of California's producing department and will have as his assistant FLOYD S. BRYANT at the headquarters of the company in San Francisco.

JOHN C. MILLER, chief geologist in the South Texas division of the Texas Company, Houston, Tex., in a talk before the Houston Geological Society, said Gulf Coast producers can look only to four horizons for the largest part of their reserves. These horizons, the Miocene, Marginulina-Frio, Jackson, and Cockfield, have been found to possess more than 44 per cent of the district's known reserves, he said.

C. D. GEORGE, Abilene, Tex., district scout for the Texas Company, has been named president of the West Central Texas group of scouts. The new "kingfish" succeeds PETER BOOTH, Humble Oil & Refining Company representative, who has been transferred to the North Texas district. J. G. ROE, formerly of Wichita Falls, takes Mr. Booth's place.

BRUCE K. BROWN has been appointed general manager in charge of research and development for the Standard Oil Company of Indiana, Chicago. Mr. Brown has been with the company since 1929, first as its general patent attorney and later as manager of the development and patent department. He will supervise the activities of Standard's refinery research laboratories.

E. A. WAHLSTROM, chairman of the Goldsmith Field Engineering Committee in Midland, Tex., has been appointed to the program committee for the Southwestern district A.P.I. meeting next spring. He succeeds J. K. HUFENDICK, of the Texas Company, who was recently transferred to South America for that company's subsidiary.

FRANCIS J. SHAVER, for several years with the Shell Oil Company and the California Mining Bureau, has been appointed manager of the Bolsa Chica Oil Company by CLIFFORD W. LORD, president. Mr. Shaver, it is announced, will divide his time between the Bolsa Chica Oil Company and Buck & Stoddard. He has acquired an interest in the latter firm.

## Active in Marketing

Appointment of O. B. Lloyd as general sales manager for the Continental Oil Company, announced by Harry J. Kennedy, vice president in charge of sales, marks another step upward for a man who long has been an active figure in oil marketing circles. Mr. Lloyd, familiarly known among his friends as "Oak," has been Continental's northern sales manager, with headquarters in Chicago, for the past three years. The promotion comes after 17 years of continuous service with the company, which began when Mr. Lloyd left the Brown-Lee Manufacturing Company, an oil and grease manufacturing subsidiary of Montgomery Ward, in 1921 to join with an associate in forming the Lloyd-Breckenridge Grease Company, which subsequently became connected with the Marland Refining Company.

*O. B. LLOYD*

In 1926 Mr. Lloyd became assistant division manager of the northern division of the Marland company, with headquarters in Hammond, Ind. He was made division manager in the same year. In 1927 he was transferred to the company's general offices in Ponca City, Okla., as sales promotion manager of the retail marketing department. Following the Continental-Marland merger Mr. Lloyd was sent to the company's marketing headquarters in Denver, Colo., as assistant general sales manager. He returned to Ponca City to serve in the same capacity in 1930. He remained there until his appointment as northern sales manager in 1935. In his new position with Continental, Mr. Lloyd will have offices in Ponca City, headquarters of the company.

BAKER HOSKINS, scout for Shell Petroleum Corporation in the Lake Charles, La., district, and R. G. YOUNGBLOOD, scout in the Kilgore district of the East Texas field, visited the company's offices at Houston last week.

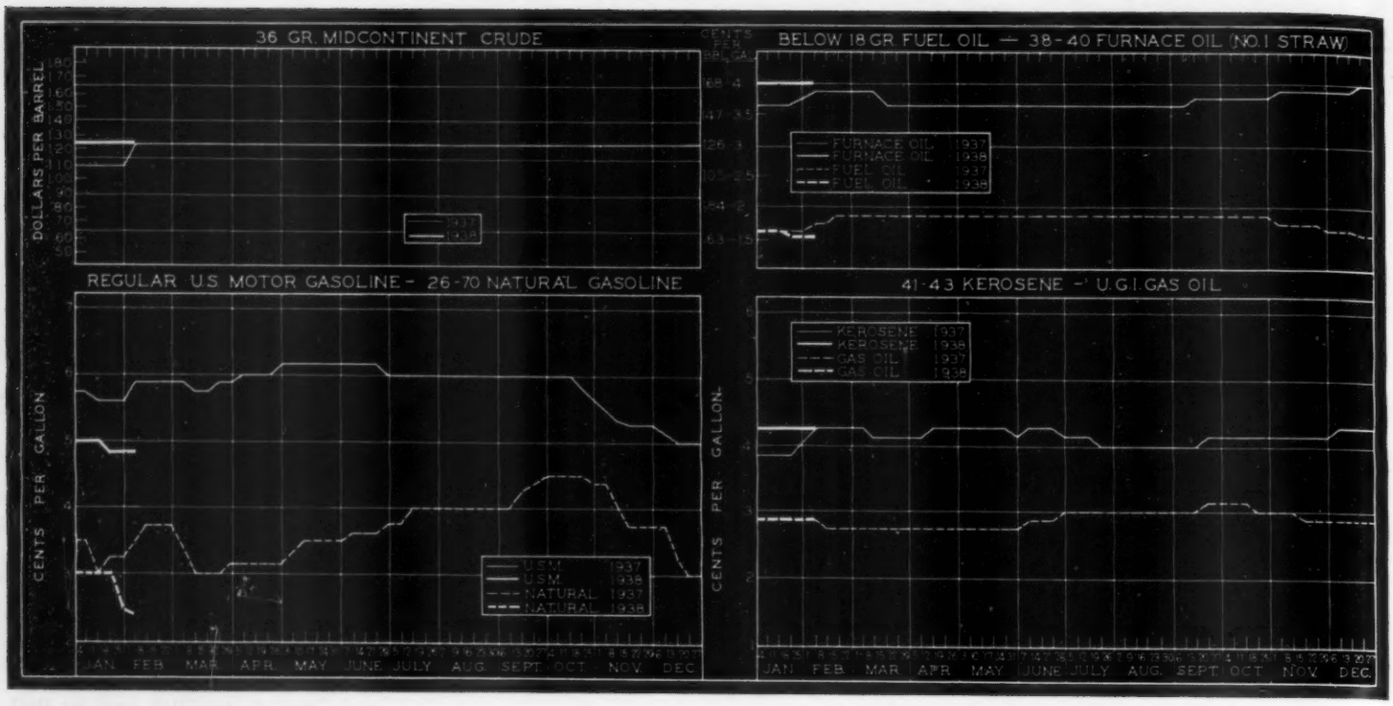
W. R. S. JONES, formerly associated with the Arkansas Fuel Oil Company in the East Texas field, has joined the Lion Oil Refining Company of El Dorado, Ark. He will supervise drilling in the Snuler field of Union County.

LESTER DINGELDINE was elected president of the Dane County (Wisconsin) Gasoline Retailers Association at a meeting in Madison. Others chosen were LLEWELLYN HINRICHS, vice president; PHILIP GOTSTEIN, secretary, and FRANK A. MOORE, treasurer.

H. L. EGGLESTON, superintendent of refineries of the Gilmore Oil Company, was the principal speaker at the January meeting of the Los Angeles Petroleum Accountants Society. He discussed maintenance control from the superintendent's viewpoint.

MITCHELL SMITH, of Buffalo, N. Y., president of the Maxol Petroleum Corporation, has purchased 33 retail outlets in western New York from Orleans Petroleum Distributors, Inc. In connection with the announcement, Mr. Smith said his company would soon build a plant at Tonawanda, N. Y., for manufacture of a top-cylinder lubricant.

C. E. STURDEVANT, for the past two years production superintendent of the Phillips Petroleum Company in the East Panhandle district, with headquarters in Pampa, has been transferred to the company's division office in Oklahoma City. He is replaced in Pampa by L. J. PRATT, formerly with Phillips in Billings, Okla.


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
BELOW 18 GR. FUEL OIL — 38-40 FURNACE OIL (NO. 1 STRAW)
FURNACE OIL 1937
FURNACE OIL 1938
FUEL OIL 1937
FUEL OIL 1938
REGULAR U.S. MOTOR GASOLINE - 26-70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. 1937
U.S.M. 1938
NATURAL 1937
NATURAL 1938
41-43 KEROSENE — U.G.I. GAS OIL
KEROSENE 1937
KEROSENE 1938
GAS OIL 1937
GAS OIL 1938
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

**Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)**

# *Reduced Operations Give Somewhat Better Tone to Group 3 Market*

**By T. F. SMILEY**

Shutdowns and cutbacks in refinery operations imparted a somewhat better tone to the Group 3 market this week, though it was not revealed in any definite stiffening of the price structure. Plants closed include those of the Globe Oil & Refining Co., Blackwell, Okla.; Pyramid Producing & Refining Co., Oklahoma City; Chase Refining Co., Chase, Kans.; Cushing Refining & Gasoline Co., Blackwell, Okla.; McMurrey Petroleum Corp., Tyler, Tex.; Barnsdall Refining Corp., Wichita, Kans.; Pure Oil Co., Muskogee, Okla.; H. F. Wilcox Oil & Gas Co., Bristow, Okla., and Shoreline Oil Co., Shreveport, La. Cushing's Blackwell plant is to be dismantled.

### Operating Schedules Reduced

The Johnson Oil Refining Co., whose plant in Cleveland, Okla., was idle from December 15 to January 16, is operating now to dispose of a relatively small accumulation of crude and then will shut down again. Kanotex Refining Co., Arkansas City, Kans., has adopted an operating schedule of two weeks in each month. Olney Oil & Refining Co., Olney, Tex., is on part time. Waggoner Refining Co., Inc., has reduced operations at its Electra, Tex., plant. Other companies have indicated an intention to curtail operations this month, with the result that the statistical position of the refining branch of the oil industry was looking better in the Mid-Continent area. Eyes were turned toward the major companies to see whether they would reduce their operations to an extent comparable with the action of independents, and so halt the accumulation of gasoline stocks. The producing division was being watched closely too, for sharp cuts in crude output are needed to support efforts to bring the market in refined products back to health.

### Refined Oil Market Barometer

Lower temperatures have lessened uneasiness over heating oil stocks, and continued cold weather probably will keep that division of the market in a fairly healthy condition. Shutdowns and reduced operating schedules are spreading and they may become an important factor in halting the rise of gasoline stocks. Tone of the lubricant market slightly improved.

**MID-CONTINENT.** Gasoline weak. Furnace oils firmer. Naturals unsteady.

**EAST COAST.** Heating oils steadier. Little change in heavy fuels. Gasoline unsettled.

**GULF COAST** Heating oils brighter. Kerosene weak. Prices steady.

**CALIFORNIA.** Gasoline soft. Diesels, gas oil and fuels lower.

**PENNSYLVANIA.** Gasoline off. Bright and steam-refined stocks stronger.

**CHICAGO.** Gasoline dull. Kerosene and heating oils firm. Heavy fuels sluggish.

Gasoline tankcar quotations continued to lack steadiness. Scattered cases of concessions from ruling prices were not hard to find. A few purchases of regular-grade motor fuel at 4⅝ cents for resale were reported, but the quantities involved were too small to represent the market.

The cold wave which swept wide regions in the past week and showed a disposition to stay a while relieved the Group 3 market of some of its darker colors, for it started rivulets of jobber orders for heating oils. Prolonged mild weather had caused stocks to back up, and refiners were beginning to feel misgivings. Indicative of what a godsend the cold snap was in some cases is the experience of one broker who had consigned furnace oil to himself at various northern distributing points, expecting jobbers to take it off his hands even before the cars arrived at their destinations. But as a result of the continued warm weather he found himself with a lot of heating oils on railroad sidings and no place to go. To escape from a dilemma which daily was becoming more costly the broker disposed of the material at prices lower than the refiners were getting for the same grades.

General feeling was more cheerful, and it was believed a few weeks of real winter would banish anxiety concerning furnace oil stocks.

### Buyers' Market in Naturals

The natural gasoline market was gasping for breath. Prices were crawling around in the cellar, and manufacturers appeared none too hopeful about them. All manufacturers had more material than they knew what to do with, and the large concerns were not in a position to extend much aid to small ones with limited storage facilities and rising stocks. A little buying for export was absorbing some of the distress material. More natural is being produced in Oklahoma than formerly and the surplus inventories have to look to the Gulf Coast for outlet. Prices for stabilized grades were holding a little better than those for 26-70, since they come more closely into competition with the refined product.

# Frigid Spell Relieves Anxiety Over Fuel Oil Structure on East Coast

By H. STANLEY NORMAN

NEW YORK, Feb. 1.—Freezing weather developed here the last three days of the past week and strengthened the structure underlying the fuel oil market. Almost balmy temperatures for the forepart of last week, including one day when the thermometer climbed to 56 degrees, an all-time record for the date, had caused considerable uneasiness in fuel oil circles.

Accompanying the warm weather, many instances of tank-wagon sales below the general market were reported as those dealing on a short margin and dependent on regular turnover of money unloaded at concession prices. Abrupt termination of the warm weather last Thursday with the mercury again pushed below the freezing point imparted new spirit to the fuel oil market.

Tankcar prices for fuel oil have remained steady since the early January reductions. The lighter grades of heating oils are offered in the tankcar market at 5 cents per gallon, with kerosene and No. 1 fuel oil held by most dealers at 6 cents per gallon.

The narrow margin between Gulf Coast cargo prices and those prevailing in the North Atlantic seaboard tankcar market is helping to sustain the New York structure. The light burning oils, No. 2 and No. 3 grades, are generally held on the Gulf Coast at 4½ cents to a fraction less, but top of the market range is required for prompt loading. Under existing circumstances it is virtually impossible for dealers dependent entirely on the spot market to compete with prices in this district. Tanker rates from the Gulf Coast to north of Cape Hatteras are reasonably strong. Dealers without boats chartered on a long-term basis and advantageous supply contracts are hard pressed to pay the current Gulf Coast fuel oil prices, the existing tanker rates and still compete on a relatively thin North Atlantic market.

The boat charter market was virtually unchanged from the preceding week. More than a score of unattached boats figured in the week's reports on chartering activity. A majority of the fixtures were involved in traffic from South American points of loading to the United Kingdom with optional provisions for loading on the Gulf Coast. The Atlantic Coast chartering reports were almost devoid of voyages to Japan last week which was a sharp reversal from the earlier part of January.

Scarcity of boats, both clean and dirty bottoms, is reported, however, for coastwise traffic indicating the extent to which long-term charters have been adopted by the industry as protection against seasonal demand and the accompanying wide fluctuations in rates.

Little change has developed in the heavier fuel oils. Bunker C oil is held in this section at $1.25 per barrel, while business can be done on the Gulf Coast at 80 to 82½ cents per barrel in cargo quantities. Most observers feel that Bunker C fuel oil prices probably will hold at the present level for duration of the winter with a possible pick-up in the early spring when shipping channels closed for the winter are reopened. Diesel fuel is unchanged at previous posting of $2.10 per barrel.

The gasoline market is still under pressure in this section. Price slashing was freely practiced in certain parts of northern New Jersey at the close of the past week. Prices were also disturbed in the Boston and Baltimore areas. In certain sections of northern New Jersey regular gasoline was reported offered as low as 11.9 cents per gallon, including state and federal taxes. The break was classified as a drive for gallonage on the part of the instigators, and the disturbance quickly spread to competitive outlets. Some observers canvassing the New Jersey situation reported prospects were good for early termination, but retail conditions have been anything but satisfactory in the affected area for months. Service stations posted varying prices ranging from the low of 11.9 cents to 14.9 cents per gallon, the latter figure being considered normal.

On the eastern side of the Hudson River retail motor fuel prices were relatively stable and volume of business was considered acceptable for the season. One of the factors said to be playing a part in New Jersey retail conditions is the stringent motor vehicle test laws now operative in that state. Vehicles falling below certain mechanical standards have been ruled from the highways. Operators of old cars, fearful that their equipment will not measure up to standard, are reported to have placed them in temporary storage until vigilance of the safety drive is relaxed. Other drivers are said to have resented the harassment from state patrolmen and have abandoned all but essential driving under existing conditions.

Movement of motor fuel against contracts is satisfactory in the New York district, but spot sales are practically at a standstill. Spot sales are reported at a price range of 6¾ to 7 cents per gallon for 65 octane motor fuel. Low of the market range is about one-fourth of a cent per gallon under the spread at the start of January.

The regular and premium grades of gasoline are in better condition marketwise than the 65 octane motor fuel, but little is moved on a spot trading basis.

Inquiries were in the hands of Gulf Coast refiners for two cargoes of gasoline in behalf of European buyers. One cargo specified 70,000 bbls. of 375 and 390 endpoint gasoline. One refiner was reported to have dropped quotations an eighth of a cent per gallon to 5⅛ cents in an effort to attract export business. Some observers thought this price was the absolute low at which exporters could hope to fill the cargo. Others said considerable material of this nature is available on the Gulf Coast at 5 cents, but that supplies obtainable at this figure were insufficient to make out a cargo and that the overall cost probably would average around 5⅛ or higher.

The other inquiry involved 65,000 bbls. of 375 endpoint gasoline and bidders for the business were holding to the price range submitted for the other shipment with loading time also receiving consideration. Both cargoes are scheduled for February loading.

Much of the January business placed by Japan is now exerting influence on the Gulf Coast market. Withdrawal of the gasoline and heavy fuel oil purchased by the Japanese government during the latter part of December and last month may relieve the pressure on these materials somewhat for the duration of February. Some of the Gulf Coast refiners report their plants are comfortably en-

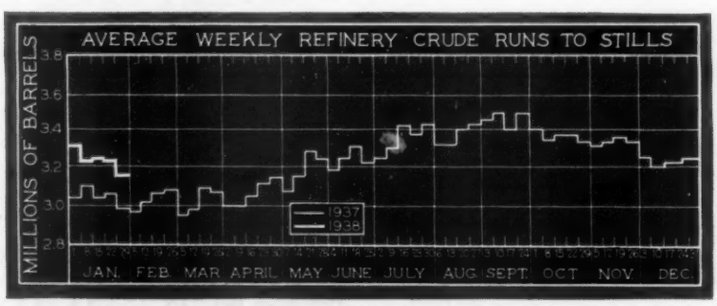
*(Continued on Page 106)*

## *A. P. I. Weekly Refinery Statistics*

**Week Ending January 29, 1938**

| | Capacity reporting (per cent) | Daily crude runs (bbls.) | Total gasoline stocks | Gas oil and fuel oil stocks |
|---|---|---|---|---|
| East Coast | 100.0 | 489,000 | 20,029,000 | 11,446,000 |
| Appalachian | 88.4 | 112,000 | 3,334,000 | 1,216,000 |
| Indiana, Illinois, and Kentucky | 92.4 | 411,000 | 13,959,000 | 6,771,000 |
| Oklahoma, Kansas and Missouri | 84.7 | 263,000 | 7,183,000 | 3,551,000 |
| Inland Texas | 56.6 | 119,000 | 2,574,000 | 1,659,000 |
| Texas Gulf | 95.7 | 732,000 | 12,732,000 | 10,487,000 |
| Louisiana Gulf | 96.6 | 136,000 | 2,526,000 | 3,281,000 |
| North Louisiana and Arkansas | 63.7 | 39,000 | 507,000 | 471,000 |
| Rocky Mountains | 69.7 | 45,000 | 1,924,000 | 691,000 |
| California | 90.9 | 510,000 | 15,186,000 | 76,430,000 |
| Total reported | 89.0 | 2,856,000 | 79,954,000 | 116,003,000 |
| Estimated unreported | ..... | 314,000 | 4,890,000 | 2,790,000 |
| *Estimated total | ..... | 3,170,000 | 84,844,000 | 118,793,000 |
| *Estimated total previous week | ..... | 3,220,000 | 82,785,000 | 118,433,000 |
| *January 30, 1937 | ..... | 2,995,000 | 68,731,000 | 102,354,000 |

*Bureau of Mines, currently estimated.




## Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

| | |
|---|---|
| Week ending January 22, 1938 | 304,424,000 barrels |
| Week ending January 15, 1938 | 303,679,000 barrels |
| Week ending January 23, 1937 | 287,228,000 barrels |

# RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of February 1, 1938

## Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

## Standard Oil Co. (Indiana)

| | Gasoline Tank wag. | Dlr. | Inc. tax | Kero. tank wag. |
|---|---|---|---|---|
| Chicago, Ill. | 15.3 | 13.3 | 4.0 | 10.2 |
| Decatur | 15.3 | 13.1 | 4.0 | 10.2 |
| Joliet | 15.3 | 13.8 | 4.0 | 10.2 |
| Peoria | 15.3 | 13.8 | 4.0 | 10.2 |
| Quincy | 15.1 | 13.6 | 4.0 | 10.0 |
| Davenport, Ia. | 15.3 | 13.8 | 4.0 | ‡13.2 |
| Des Moines | 15.1 | 13.6 | 4.0 | ‡11.0 |
| Mason City | 15.4 | 13.9 | 4.0 | ‡13.3 |
| Sioux City | 15.3 | 13.8 | 4.0 | ‡13.2 |
| Duluth, Minn. | 17.0 | 15.5 | 5.0 | 10.9 |
| Mankato | 16.7 | 15.2 | 5.0 | 10.6 |
| Minneapolis | 16.7 | 15.2 | 5.0 | 10.6 |
| Lacrosse, Wis | 16.7 | 15.2 | 5.0 | 10.6 |
| Green Bay | 17.0 | 15.5 | 5.0 | 9.9 |
| Milwaukee | 16.5 | 15.0 | 5.0 | 10.4 |
| Detroit, Mich. | 15.1 | 13.6 | 4.0 | 9.8 |
| Grand Rapids | 16.3 | 14.8 | 4.0 | 11.0 |
| Saginaw | 16.1 | 14.6 | 4.0 | 9.1 |
| Evansville, Ind. | 16.8 | 15.3 | 5.0 | †10.7 |
| Indianapolis | 16.9 | 15.4 | 5.0 | †10.8 |
| South Bend | 17.2 | 15.7 | 5.0 | †11.1 |
| Fargo, N. Dak. | 16.7 | 15.2 | 4.0 | 11.6 |
| Minot | 17.9 | 16.4 | 4.0 | 12.8 |
| Huron, S. Dak. | 17.1 | 15.6 | 5.0 | 11.0 |
| Kans. City, Mo.* | 14.6 | 13.1 | 4.0 | 9.5 |
| St. Louis* | 14.9 | 13.4 | 4.0 | 9.8 |
| St. Joseph | 14.6 | 11.4 | 4.0 | 9.5 |
| Wichita, Kans. | 14.1 | 11.0 | 4.0 | 8.5 |

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Iowa kerosene prices include 3-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

## Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

## Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

| | Gasoline Tank wag. dlr. | Tank car con'r. | Inc. tax | Kero. tank wag. |
|---|---|---|---|---|
| Atl'tic City, N. J. | 12.75 | 11.25 | 4.0 | 8.5 |
| Newark | 12.75 | 11.25 | 4.0 | 8.5 |
| Annapolis, Md. | 14.85 | 13.35 | 5.0 | 9.5 |
| Baltimore | 14.25 | 12.75 | 5.0 | 9.0 |
| Cumberland | 16.65 | 14.15 | 5.0 | 10.0 |
| Wash'g'n, D. C. | 12.5 | 11.0 | 3.0 | 9.5 |
| Danville, Va. | 17.45 | 14.95 | 6.0 | 12.9 |
| Norfolk | 16.25 | 13.75 | 6.0 | 11.5 |
| Petersburg | 16.55 | 14.05 | 6.0 | 11.7 |
| Richmond | 16.55 | 14.05 | 6.0 | 11.7 |
| Roanoke | 17.75 | 15.25 | 6.0 | 12.9 |
| Charlee'n, W. V. | 17.05 | 14.55 | 6.0 | 12.6 |
| Parkersburg | 15.35 | 13.85 | 6.0 | 11.2 |
| Wheeling | 16.25 | 14.85 | 6.0 | 12.2 |
| Charlotte, N. C. | 18.65 | 16.15 | 7.0 | 12.6 |
| Hickory | 19.15 | 16.65 | 7.0 | 13.0 |
| Mt. Airy | 18.95 | 16.45 | 7.0 | 12.8 |
| Raleigh | 18.25 | 15.75 | 7.0 | 12.1 |
| Salisbury | 18.75 | 16.25 | 7.0 | 12.7 |
| Charleston, S. C. | 17.25 | 14.75 | 7.0 | 11.1 |
| Columbia | 18.25 | 15.75 | 7.0 | 12.1 |
| Spartanburg | 18.95 | 16.45 | 7.0 | 12.9 |

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5-cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey

## Southern District

STANDARD OIL CO. OF KENTUCKY

| | Gasoline Tank wag. | Net dlr. | Inc. tax | Kero tank wag. |
|---|---|---|---|---|
| Atlanta, Ga. | 21.0 | 18.0 | 7.0* | †14.0 |
| Augusta | 21.0 | 18.0 | 7.0 | *14.0 |
| Macon | 21.0 | 18.0 | 7.0 | *14.5 |
| Savannah | 19.5 | 16.5 | 7.0 | *12.0 |
| Birm'ham, Ala. | 22.0 | 19.0 | 8.0 | 12.0 |
| Mobile | 22.0 | 19.0 | 9.0 | 12.0 |
| Montgomery | 22.0 | 19.0 | 9.0 | †13.0 |
| Jackson, Miss. | 20.0 | 17.0 | 7.0 | *13.0 |
| Vicksburg | 20.0 | 17.0 | 7.0 | *13.0 |
| Jacks'vlle, Fla. | 22.5 | 17.5 | 8.0 | †11.0 |
| Miami | 20.5 | 17.5 | 8.0 | †12.5 |
| Pensacola | 22.0 | 19.0 | 9.0 | 12.0 |
| Tampa | 20.5 | 17.5 | 8.0 | 10.5 |
| Lexington, Ky. | 19.5 | 16.5 | 6.0 | 11.0 |
| Covington | 18.5 | 15.5 | 6.0 | 11.0 |
| Louisville | 19.0 | 16.0 | 6.0 | 10.5 |
| Paducah | 19.5 | 16.5 | 6.0 | 10.0 |

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax. †Subject to 2-cent discount.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

## Rocky Mountain District

CONTINENTAL OIL CO.

| | Gasoline Dealer | Inc. tax | Kero. tank wag. |
|---|---|---|---|
| Denver, Colo. | 15.0 | 5.0 | 11.5 |
| Grand Junction | 19.0 | 5.0 | 15.0 |
| Pueblo | 14.0 | 5.0 | 10.5 |
| Casper, Wyo. | 17.0 | 5.0 | 11.5 |
| Cheyenne | 16.0 | 5.0 | 13.0 |
| Butte, Mont. | 19.5 | 6.0 | 15.5 |
| Billings | 19.5 | 6.0 | 15.5 |
| Helena | 19.5 | 6.0 | 15.5 |
| Great Falls | 19.5 | 6.0 | 15.5 |
| Salt Lake City, Utah | 19.5 | 5.0 | 16.0 |
| Twin Falls, Ida. | 21.0 | 6.0 | 18.0 |
| Boise | 21.5 | 6.0 | 18.0 |
| Albuquerque, N. M. | 17.5 | *6.5 | 12.0 |

*Includes city tax of one-half cent.

## Ohio

STANDARD OIL CO. OF OHIO

| | Gasoline Tank wag. con'r. | Di-vided dlr. | Inc. tax | Kero. tank wag. |
|---|---|---|---|---|
| Ohio points | 16.0 | 15.00 | 5.0 | *13.0 |

*Includes state tax of 1 cent.

## New York and New England

SOCONY-VACUUM OIL CO., INC.

| | Gasoline Tank wag. dlr. | Tank car con'r. | Inc. tax | Kero tank wag. |
|---|---|---|---|---|
| Albany, N. Y. | 14.5 | 12.5 | 5.0 | 9.0 |
| *Met. N. Y.: | | | | |
| M'nh't'n, Br'nx | 14.5 | 12.5 | 5.0 | 8.75 |
| Staten Island | 14.5 | 12.5 | 5.0 | 8.75 |
| Q'ns. & Brklyn | 14.5 | 12.5 | 5.0 | 8.75 |
| Buffalo | 14.0 | 13.04 | 5.0 | 7.5 |
| Rochester | 15.0 | 13.17 | 5.0 | 8.5 |
| Syracuse | 14.5 | 13.12 | 5.0 | 9.0 |
| Boston, Mass. | 13.0 | 11.5 | 4.0 | 8.5 |
| Portland, Me. | 14.5 | 12.7 | 5.0 | 8.75 |
| Manch'ter, N. H. | 15.0 | 13.0 | 5.0 | 9.0 |
| Burlington, Vt. | 14.9 | 12.9 | 5.0 | 9.5 |

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

## Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

| | Gasoline Tank wag. | Serv. sta. | Inc. tax | Kero. tank wag. |
|---|---|---|---|---|
| San Francisco | 17.5 | 18.5 | 4.0 | 11.5 |
| Los Angeles | 17.0 | 18.0 | 4.0 | 10.0 |
| Fresno, Calif. | 18.5 | 19.5 | 4.0 | 12.5 |
| Phoenix, Ariz. | 21.0 | 22.0 | 6.0 | ‡17.0 |
| Reno, Nev. | 20.0 | 21.0 | 5.0 | 13.0 |
| Portland, Ore. | 20.0 | 21.0 | 6.0 | 13.5 |
| Seattle, Wash. | 20.0 | 21.0 | 6.0 | 13.5 |
| Spokane | 22.5 | 23.5 | 6.0 | 16.0 |
| Tacoma | 20.0 | 21.0 | 6.0 | 13.5 |

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

## Nebraska

STANDARD OIL CO. OF NEBRASKA

| | Gasoline Tank wag. | Dlr. | Inc. tax | Kero. tank wag. |
|---|---|---|---|---|
| Omaha | 17.7 | 16.2 | 6.0 | 10.5 |
| McCook | 17.5 | 13.5 | 6.0 | 10.0 |
| Norfolk | 18.1 | 16.6 | 6.0 | 10.9 |
| North Platte | 18.5 | 17.0 | 6.0 | 11.3 |
| Scotts Bluff | 19.2 | 16.0 | 6.0 | 12.0 |

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

## Central South District

STANDARD OIL CO. OF LOUISIANA

| | Gasoline Tank dlr. | Tank wag. con'r. | Inc. tax | Kero. tank wag. |
|---|---|---|---|---|
| N. Orleans, La. | 19.75 | 17.25 | *10.0 | †12.0 |
| Baton Rouge | 17.75 | 15.25 | 8.0 | 12.0 |
| Alexandria | 18.25 | 15.75 | 8.0 | 10.5 |
| Lafayette | 18.75 | 16.25 | 8.0 | 13.0 |
| Lake Charles | 19.75 | 16.25 | 8.0 | 12.5 |
| Shreveport | 17.25 | 14.75 | 8.0 | 9.5 |
| Kn'xv'le, Tenn. | 20.75 | 18.25 | 8.0 | 14.0 |
| Memphis | 18.75 | 16.25 | 8.0 | 12.0 |
| Chattanooga | 20.25 | 17.75 | 8.0 | 13.5 |
| Nashville | 19.75 | 17.25 | 8.0 | 11.5 |
| Bristol | 19.50 | 18.25 | 8.0 | 14.5 |

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1 cent state tax.

## Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

| | Gasoline Tank wag. dlr. | Tank car con'r. | Inc. tax | Kero. tank wag. |
|---|---|---|---|---|
| Philadelphia, Pa. | 13.25 | 12.25 | 5.0 | 10.5 |
| Pittsburgh | 15.0 | 13.0 | 5.0 | 11.0 |
| Allentown | 14.25 | 12.75 | 5.0 | 11.0 |
| Erie | 14.5 | 13.0 | 5.0 | 10.0 |
| Scranton | 14.5 | 13.0 | 5.0 | 11.0 |
| Altoona | 15.0 | 13.0 | 5.0 | 11.0 |
| Dover, Del. | 14.5 | .... | 5.0 | 11.0 |
| Wilmington | 14.0 | .... | 5.0 | 11.0 |
| Springf'd, Mass. | 13.5 | .... | 4.0 | 8.5 |
| Worcester | 14.3 | .... | 4.0 | 9.0 |
| Hartford, Conn. | 13.6 | .... | 4.0 | 8.5 |
| New Haven | 13.5 | .... | 4.0 | 8.0 |
| Providence, R. I. | 13.3 | .... | 4.0 | 8.5 |

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

## Oklahoma and Arkansas

CONTINENTAL OIL CO.

| | Gasoline Dealer | Inc. tax | Kero. tank wag. |
|---|---|---|---|
| Muskogee, Okla. | 14.5 | 5.0 | 7.0 |
| Oklahoma City | 14.0 | 5.0 | 8.0 |
| Tulsa | 14.0 | 5.0 | 6.0 |
| Ft. Smith, Ark. | 14.75 | 5.0 | 8.0 |
| Little Rock | 17.25 | 7.5 | 9.5 |
| Texarkana | 14.0 | 5.0 | 8.5 |

## Texas

| | Gasoline Tank wag. | Serv. sta. | Inc. tax | Kero. tank wag. |
|---|---|---|---|---|
| Dallas, Tex. | 14.0 | 18.5 | 5.0 | 8.0 |
| Fort Worth | 14.0 | 18.0 | 5.0 | 8.0 |
| Houston | 14.5 | 19.0 | 5.0 | 8.0 |
| San Antonio | 14.5 | 18.5 | 5.0 | 8.0 |

## Naphtha

STANDARD OIL CO. (INDIANA)

| | Tank-wagon* |
|---|---|
| Oleum spirits | 15.7 |
| V.M.&P. naphtha | 16.0 |
| Cleaners' naphtha | 15.0 |
| Stanisol | 15.0 |

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

## Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

| | Tank-wag. | Inc. tax | Kero. tank wag. |
|---|---|---|---|
| Halifax, N.S. | 24.0 | 8.0 | 18.5 |
| St. John, N.B. | 24.0 | 8.0 | 18.5 |
| Montreal, Que. | 21.0 | 6.0 | 17.5 |
| Toronto, Ont. | 22.0 | 6.0 | 17.0 |
| Hamilton, Ont. | 22.0 | 6.0 | 17.0 |
| Winnipeg, Man. | 27.5 | 7.0 | 20.7 |
| Brandon, Man. | 28.1 | 7.0 | 22.3 |
| Regina, Sask. | 27.0 | 7.0 | 22.0 |
| Saskatoon, Sask. | 29.8 | 7.0 | 24.8 |
| Edmonton, Alta. | 26.5 | 7.0 | 21.5 |
| Calgary, Alta. | 24.0 | 7.0 | 19.0 |
| Vancouver, B.C. | 23.0 | 7.0 | 23.0 |

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

## Retail Price Changes

Standard Oil Co. (Indiana) January 25 reduced dealer gasoline 1.4 cents in Wichita; January 26 reduced tank-wagon kerosene 1 cent in Green Bay.

Standard Oil Co. of Nebraska January 21 advanced tank-wagon kerosene 1 cent in Mobile; January 19 reduced tank-wagon and dealer gasoline .5 cent in Pensacola.

Standard Oil Co. of Nebraska January 24 reduced tank-wagon gasoline .9 cent and tank-wagon kerosene 1.2 cents in McCook.

## British Colombia Test

Columbia Oils, Ltd., of Vancouver, operating in the Sage Creek-Flathead Valley area in the southeastern part of the province, has elected the following directors: D. S. Wallbridge, A. J. Hendry, F. E. Burke, J. L. Trumbull, W. A. Sutton, Robert Wilkinson, H. McL. Russell, O. C. Thompson, A. K. Leitch and G. H. Kirkpatrick. Columbia Oils No. 1 is being completed for the company by Robert Wilkinson and associates of Calgary, D. S. Wallbridge being president and Mr. Wilkinson managing director of the reorganized company. Since resuming operations last August, the hole has been deepened from 5,808 to 6,836 feet. It is in the Waterton formation, the core showing more shale with a petroleum odor while the gas flow is larger. Contract calls for deepening to 8,000 feet if necessary, the contract price being $17 a foot. Owing to difficulties of land transportation, airplanes are being largely used to reach the well, a landing field having been constructed.

# PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of February 1, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

## Refinery Gasoline

**OKLAHOMA (Group 3)—**

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 oct. and below | .03⅞ | .04 |
| 63-66 octane | .04⅜ | .04½ |
| 67-69 octane | .04⅝ | .04⅞ |
| 70-72 octane (regular) | .04⅞ | .05 |
| 60-62 400 grades: | | |
| 62 oct. and below | .03⅞ | .04 |
| 63-66 octane | .04⅜ | .04½ |
| 67-69 octane | .04⅝ | .04⅞ |
| 70-72 octane (regular) | .04⅞ | .05 |
| 64-66 375 | .04½ | .04⅝ |
| 68-70 360 | .04⅞ | .05⅛ |

**NORTH TEXAS—**

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below | .03⅞ | .04 |
| 63-66 octane | .04⅜ | .04½ |
| 67-69 octane | .04⅝ | .04⅞ |
| 70-72 octane (regular) | .04⅞ | .05 |
| 60-62 400 | .03⅞ | .04 |
| 64-66 375 | .04½ | .04⅝ |

**NORTH LOUISIANA (Ark., N. La. and Miss. delivery)**

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below | .04½ | .04¾ |
| 63-66 octane | .04⅝ | .04⅞ |
| 67-69 octane | .05 | .05⅛ |
| 70-72 octane (regular) | .05⅛ | .05⅜ |

**ARKANSAS (Ark., N. La., Miss. del.)—**

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below | .04⅜ | .04⅝ |
| 67-69 octane | .05 | .05⅛ |
| 70-72 octane (regular) | .05½ | .05⅝ |

**CHICAGO (Based on Group 3)—**

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below | .04 | .04⅛ |
| 63-66 octane | .04⅜ | .04⅝ |
| 67-69 octane | .04⅝ | .04⅞ |
| 70-72 octane (regular) | .05 | .05⅛ |
| 60-62 400 grades: | | |
| 62 octane and below | .04 | .04⅛ |
| 63-66 octane | .04⅜ | .04⅝ |
| 67-69 octane | .04⅝ | .04⅞ |
| 70-72 octane (regular) | .05 | .05⅛ |
| 64-66 375 | .04¾ | .05 |
| 68-70 360 | .05 | .05⅛ |

**PENNSYLVANIA (Inland refineries)—**

| | | |
|---|---|---|
| 58-60 U. S. Motor: | | |
| Below 60 octane | .04½ | .04¾ |
| 65 octane | .06½ | .06¾ |
| 68-70 octane | .07 | .07⅛ |

**CALIFORNIA (domestic movement)—**

| | | |
|---|---|---|
| 54-58 U. S. Motor | .07 | .08½ |
| 58-60 400, 65 oct. and higher | .08 | .09⅛ |

**EAST COAST (Domestic)—**

| | | |
|---|---|---|
| U. S. Motor, 60-64.9 octane: | | |
| New York (Bayonne) | .07 | .07⅛ |
| Philadelphia | .07 | .07⅛ |
| Boston | .07½ | .07¾ |
| Baltimore | .07 | .07⅛ |
| Charleston, S. C. | .07 | .07⅛ |
| U. S. Motor, 65 and above: | | |
| *New York (Bayonne) | .07⅛ | .07⅜ |
| Philadelphia | .07⅛ | .07⅜ |
| Boston | .07¾ | .07⅝ |
| Baltimore | .07⅛ | .07½ |
| Charleston, S. C. | .07¾ | .08 |

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

**GULF COAST (domestic)—**

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| Below 60 octane | .05 | .05⅛ |
| 60-64.9 | | .05⅛ |
| 65 octane and higher | .05½ | .05⅝ |

## Naphtha

**PENNSYLVANIA (Inland refineries)—**

| | | |
|---|---|---|
| 52-56 450 (blending) | .04½ | .04¾ |

## Natural Gasoline

**OKLAHOMA (Group 3)—**

| | |
|---|---|
| Grade 26-70 | .02¾ |
| Grade 18-55 | .03 |

**NORTH TEXAS—**

| | |
|---|---|
| Grade 26-70 | .02½ |
| Grade 18-55 | .03 |

**CALIFORNIA—**

| | | |
|---|---|---|
| 75-85 375-390 | .06½ | .07½ |

**NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—**

| | |
|---|---|
| Grade 26-70 | .02¾ |

## Tractor Fuel

**OKLAHOMA (Group 3)—**

| | | |
|---|---|---|
| 40-42 gr., 315-325 l.b.p., 110 flash, 540-550 e.p. | .04¼ | .04⅜ |
| 41-43 gr., 300-520 e.p., 110-125 flash, 500-520 e.p. | .04¼ | .04½ |
| 46-48 gr., 210-230 l.b.p., 480 max. e.p. | .04¾ | .04⅞ |

## Kerosene

(All kerosene water white)

**OKLAHOMA (Group 3)—**

| | | |
|---|---|---|
| 41-43 | .04¼ | .04⅜ |
| 42-44 | .04⅜ | .04½ |

**NORTH TEXAS—**

| | | |
|---|---|---|
| 41-43 | .04¼ | .04⅜ |

**NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—**

| | | |
|---|---|---|
| 41-43 | .04½ | .04⅝ |

**ARKANSAS (Ark., N. La., Miss. del.)—**

| | | |
|---|---|---|
| 41-43 | | .04⅝ |

**PENNSYLVANIA (inland refineries)—**

| | | |
|---|---|---|
| 45 | .05⅜ | .05½ |
| 46 | .05½ | .05⅝ |
| 47 | .05⅝ | .05¾ |

**CHICAGO (Based on Group 3)—**

| | | |
|---|---|---|
| 41-43 | .04⅛ | .04⅜ |
| 42-44 | .04⅜ | .04⅝ |

**CALIFORNIA (Pac. Coast market)—**

| | | |
|---|---|---|
| 38-43 high burning test | .05¾ | .06¾ |

**NEW YORK (Bayonne, N. J.)—**

| | | |
|---|---|---|
| 41-43 | | .06 |

***GULF COAST (domestic)—**

| | | |
|---|---|---|
| 41-43 | .05 | .05⅛ |

*Barge price one-eighth cent lower.

## Furnace Oil

**OKLAHOMA (Group 3)—**

| | | |
|---|---|---|
| No. 1 prime white, 38-42 | .04⅛ | .04¼ |
| No. 1 straw, 38-40 | .04 | .04⅛ |
| No. 2 straw, 32-36 | .03⅞ | .04 |
| No. 2 dark, 32-36 | .03¾ | .03⅞ |
| No. 3 zero to 15, 28-32 | .03½ | .03⅝ |
| No. 3, 15 and above, 28-32 | .03 | .03⅛ |

**NORTH TEXAS—**

| | | |
|---|---|---|
| No. 1 prime white, 38-42 | .04⅛ | .04¼ |
| No. 1 straw, 38-40 | .04 | .04⅛ |

**NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—**

| | | |
|---|---|---|
| No. 2, 32-36 | .03⅝ | .03¾ |

**ARKANSAS (Ark., N. La., Miss. del.)—**

| | | |
|---|---|---|
| No. 2, 32-36 | .03⅞ | .04 |

**CHICAGO (Based on Group 3)—**

| | | |
|---|---|---|
| No. 1 prime white 38-40 | .04⅛ | .04¼ |
| No. 1 straw, 38-40 | .04 | .04⅛ |
| No. 2 straw, 32-36 | .03⅞ | .04 |
| No. 2 dark, 32-36 | .03¾ | .03⅞ |
| No. 3, zero to 15, 28-32 | .03½ | .03⅝ |
| No. 3, 15 and above, 28-32 | .03 | .03⅛ |

**NEW YORK (Bayonne, N. J.)—**

| | | |
|---|---|---|
| *No. 1 | | .06 |
| *No. 2 | | .05¼ |
| *No. 4 | | .05 |

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

## Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

**OKLAHOMA (Group 3)—**

| | | |
|---|---|---|
| U.G.I. gas oil | .02⅞ | .03 |
| No. 4, low cold test, 24-28 | 1.10 | 1.15 |
| No. 4, 15 and above, 24-28 | .90 | .95 |
| No. 5, low cold test, 18-22 | .80 | .85 |
| Below 18 fuel oil, industrial | .67½ | .72½ |

**NORTH TEXAS—**

| | | |
|---|---|---|
| U.G.I. gas oil | .02⅞ | .03 |
| No. 4, low cold test, 24-28 | 1.10 | 1.15 |
| No. 5, low cold test, 18-22 | .80 | .85 |
| Below 18 fuel oil, industrial | .67½ | .72½ |

**NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—**

| | | |
|---|---|---|
| 10-14 fuel oil, industrial | .80 | .85 |

**CHICAGO (Based on Group 3)—**

| | | |
|---|---|---|
| U.G.I. gas oil | .03 | .03⅛ |
| No. 4, low cold test, 24-28 | 1.10 | 1.15 |
| No. 4, 15 and above, 24-28 | .90 | .95 |
| No. 5, low cold test, 18-22 | .80 | .87½ |
| No. 5, 15 and above, 18-22 | .75 | .82½ |
| No. 6, low cold test, 10-16 | .72½ | .80 |
| No. 6, 15 and above, 10-16 | .55 | .60 |

**PENNSYLVANIA (inland refineries)—**

| | | |
|---|---|---|
| 36-40 | .04⅞ | .05⅛ |

**CALIFORNIA**

| | | |
|---|---|---|
| Los Angeles: | | |
| 30-40 gas oil, per bbl. | 1.35 | 1.70 |
| 24 plus diesel, per bbl. | 1.45 | 1.70 |
| 24 plus diesel (bunkers) | 1.55 | 1.70 |
| 12-16 (bunkers at tidewater) | .90 | 1.00 |
| 10-16 (cargo lots) | .85 | 1.00 |
| 12-17 (tankcars) | .80 | .100 |
| 10-17 (high sulfur) | .65 | .90 |
| San Joaquin Valley: | | |
| 10-18 tankcars) | .60 | .85 |
| 24 plus diesel, per bbl. | 1.40 | 1.70 |
| San Francisco: | | |
| 24 plus diesel, per bbl. | 1.55 | 1.70 |
| 24 plus diesel (bunkers) | 1.60 | 1.70 |
| 10-16 (bunkers) | .100 | 1.05 |

**GULF COAST—**

| | | |
|---|---|---|
| 28-30 gas oil | .04½ | .04⅝ |
| 28-30 diesel (bunkers) | | 1.90 |
| Bunkers (bulk cargoes) | | .85 |
| Bunker C (bunkers) | | 1.05 |

**NEW YORK (Bayonne, N. J.)—**

| | | |
|---|---|---|
| 27 plus, gas oil | | .05 |
| 28-30 diesel (lighterage 6¼c per bbl.) | | 2.10 |
| 28-30 diesel (tankcars) | | .05 |
| Bunker C (to ocean-going ships in N. Y. harbor) | | 1.25 |
| Industrial fuel (tankcars) | .04½ | .04¾ |

Lighterage charge 5c bbl. additional.

## Bright and Steam Refined

**OKLAHOMA (Group 3)—**

| | |
|---|---|
| Bright Stocks: | |
| 190-200 D, 15-25 | .19 |
| 150-160 D, 0-10 | .16 |
| 150-160 D, 15-25 | .15 |
| 150-160 E, 15-25 | .14½ |
| 100-110 D, 0-10 | .14½ |
| Steam refined: | |
| 631 green (treated) | .13½ |
| 600 dark green (untreated) | .05 |

**PENNSYLVANIA—**

| | | |
|---|---|---|
| Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash): | | |
| 10 pour test | .18½ | .19½ |
| 15 pour test | .17½ | .18½ |
| 20 pour test | .16½ | .17½ |
| 25 pour test | .15½ | .16½ |
| Steam refined: | | |
| 600 | .08½ | .09 |
| 650 | .10½ | .11½ |
| 600 Pennsylvania flash | .11 | .12 |
| 630 flash | .14 | .15 |
| 600 Warren E filtered | .13 | .14 |

## Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

**OKLAHOMA (Group 3)—**

| | |
|---|---|
| Zero to 10 Cold Test: | |
| 150-3 | .09 |
| 180-3 | .10 |
| 180-4 | .09½ |
| 200-3 | .10½ |
| 200-4 | .10 |
| 250-3 | .11½ |
| 250-4 | .11 |
| 280-3 | .12½ |
| 280-4 | .12 |
| 300-3½ | .13 |
| 400-3½ | .14 |
| 100-2½ paraffin oil | .06 |
| 15-20 Cold Test: | |
| 200-3 | .10 |
| 200-4 | .09½ |
| 250-3 | .11 |
| 250-4 | .10½ |
| 280-3 | .12 |
| 280-4 | .11½ |

**GULF COAST—**

| | | |
|---|---|---|
| Pale Oils: | | |
| 200-3 | .07 | .07¼ |
| 300-3 | .07½ | .07¾ |
| 500-3½ | .08½ | .08¾ |
| 750-3½ | .08⅝ | .09¼ |
| 1,200-3½ | .09½ | .09¾ |
| 1,500-4 | .09¾ | .10 |
| Red Oils: | | |
| 200-5-6 | .07¼ | .07½ |
| 300-5-6 | .07¼ | .07½ |
| 500-5-6 | .08 | .08½ |
| 750 | .08¾ | .09 |
| 1,200-5-6 | .09¼ | .09½ |

**CALIFORNIA (moving to dom. market)—**

| | | |
|---|---|---|
| Pale Oils: | | |
| 100-2½-3 | .07¼ | .08 |
| 200-2½-3 | .07¼ | .08 |
| 300-2½-3 | .07¼ | .08 |
| 400-3-4 | .07¼ | .08 |
| 450-3-4 | .07¼ | .08 |
| 550-3-4 | .09 | .11 |
| 600-3-4 | .09 | .11 |
| Red Oils: | | |
| 200-4-5 | .07¼ | .08 |
| 300-5-6 | .07¼ | .08 |
| 350-5-6 | .09¼ | .11½ |
| 400-5-6 | .09¼ | .11½ |
| 450-5-6 | .09¼ | .11½ |
| 500-5-6 | .09¼ | .11½ |
| 600-5-6½ | .09¼ | .11½ |
| 700-6½ plus | .09¼ | .11½ |
| 750-6½ plus | .09¼ | .11½ |
| 900-6½ plus | .09¼ | .11½ |

**PENNSYLVANIA—**

| | | |
|---|---|---|
| 150 vis. at 70° F. color, 400-405 flash: | | |
| Zero pour test | .17½ | .18 |
| 10 pour test | .16½ | .17 |
| 15 pour test | .16 | .16½ |
| 25 pour test | .15 | .15½ |
| 180 vis. at 70° F., 3 color: | | |
| 25 pour test | .16 | .16½ |
| 200 vis. at 70° F., 3 color: | | |
| Zero pour test | .20½ | .21 |
| 10 pour test | .19½ | .20 |
| 15 pour test | .19 | .19½ |
| 25 pour test | .17 | .17½ |

## Wax and Petrolatum

(Prices per pound)

**OKLAHOMA (Group 3)—**

| | | |
|---|---|---|
| 124-126 (a.m.p.) w.c. scale | .02⅝ | .02¾ |

**PENNSYLVANIA (Inland refineries)—**

| | | |
|---|---|---|
| 122-124 (a.m.p.) w.c. scale | .0255 | .0260 |
| 124-126 (a.m.p.) w.c. scale | .0255 | .0260 |

**NEW YORK—**

| | | |
|---|---|---|
| Wax in bags fully refined: | | |
| 122-125 (a.m.p.) wax | | .0445 |
| 125-127 (a.m.p.) wax | | .0455 |
| 128-130 (a.m.p.) wax | | .0480 |
| 130-132 (a.m.p.) wax | | .0505 |
| 133-135 (a.m.p.) wax | | .0535 |
| 135-137 (a.m.p.) wax | | .0560 |
| 124-126 (a.m.p.) w.s. | .0295 | .0300 |
| 124-126 (a.m.p.) y.s. | .0265 | .0280 |
| Petrolatum in barrels, carload lots: | | |
| Dark green | | .01⅞ |
| Amber | .02⅞ | .03 |
| Extra amber | .03 | .03⅛ |
| Lily white | .06⅝ | .06¾ |
| Snow white | .07¾ | .07⅞ |
| Cream | .05⅝ | .05¾ |

## Export Prices

### GASOLINE

**GULF COAST—**

| | | |
|---|---|---|
| U. S. Motor | .05 | .05⅛ |
| 60-62 400 | .05⅝ | .05½ |
| 61-63 390 | | .05⅝ |
| 64-66 375 | | .05¾ |

**LOS ANGELES—**

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 55-65 octane | .05¾ | .06 |
| 65-69 octane | | .06¼ |
| Above 69 octane | | .06½ |

### KEROSENE

**GULF COAST—**

| | |
|---|---|
| 41-43 prime white | .05⅛ |
| 41-43 water white | .05¼ |
| 44 water white | .05⅜ |

**LOS ANGELES—**

| | | |
|---|---|---|
| 41-43 water white | .05 | .05¼ |

### LUBRICANTS

(Pennsylvania Grade)

**NEW YORK (f.o.s. in bbls.)—**

| | | |
|---|---|---|
| Cylinder Stocks: | | |
| 600 Warren E | .21½ | .22 |
| 600 S.R. unfiltered | .16½ | .17 |
| 630 S.R. unfiltered | .21 | .21½ |
| 600 flash, S.R. | .21½ | .22 |
| 630 flash, S.R. | .25½ | .26 |
| Bright Stocks: | | |
| 8 color | .23½ | .24 |
| 6½ plus color in dilution | .23 | .23½ |

### NEUTRAL OIL

| | | |
|---|---|---|
| 200-3 color | .30 | .30½ |
| 150-3 color | .25½ | .26 |

### PARAFFIN WAX

**NEW YORK (prices per pound)—**

| | |
|---|---|
| 123-126 a.m.p. | .04125 |
| 125-127 a.m.p. | .0425 |
| 128-130 a.m.p. | .0450 |
| 133-135 a.m.p. | .0525 |
| 135-137 a.m.p. | .0550 |
| Crude Scale: | |
| 124-126 w.s. | .0295 .0300 |
| 124-126 y.s. | .0265 .0280 |

# CRUDE OIL PRICES

## Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

| | |
|---|---|
| East Texas (May 22, 1937)* | $1.35 |
| Van, Tex.† | 1.10 |
| Camp Hill, Tex. | 1.27 |
| Cass County, Tex.‡ | 1.25 |
| Talco | .73 |
| Altus and Tipton, Okla.§ | 1.20 |
| Other fields (see gravity table). | |

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

## West Texas

See gravity table.

| | |
|---|---|
| Pecos County* | .91 |
| Pecos shallow† | .81 |

*Shell Petroleum Corp., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

## Rocky Mountain States

(Effective January 28, 1937)

| | |
|---|---|
| Iles, Colo., light* | $1.18 |
| Iles, Colo., heavy* | 1.12 |
| Greybull, Wyo.* | 1.30 |
| Torchlight, Wyo.* | 1.30 |
| Grass Creek, Wyo., light*† | 1.30 |
| Grass Creek, Wyo., heavy (Nov. 4, 1936)*† | .62 |
| Hamilton Dome, Wyo. (Jan. 1, 1937)* | .67 |
| Elk Basin, Wyo., light*† | 1.30 |
| Frannie, Wyo., heavy* | .62 |
| Frannie, Wyo., light | .70 |
| Hogback, New Mex. (Jan. 1, 1937)* | 1.21 |
| Pondera, Mont. (Jan. 26, 1936)* | 1.05 |
| Salt Creek Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis. | |
| Big Muddy, Wyo.†‡ | 1.23 |
| Rock Creek, Wyo.† | 1.30½ |
| Lea County, N. M. (see West Texas gravity table) | |
| Artesia, N. Mex. (Jan. 28, 1937)† | .90 |
| Maljamar, N. Mex. (Jan. 28, 1937)‡ | .90 |
| Canon City and Florence, Colo. | 1.10 |
| Lance Creek, Wyo. | .97 |
| Sunburst, Mont. (Nov. 16, 1937)† | .90 |
| Cat Creek, Mont. (Jan. 1, 1938)‡ | $1.30 |
| Cut Bank, Mont. (Oct. 25, 1937), (posted by Northwest Refining Co.) | 1.10 |
| Garland, Wyo. (Jan. 1, 1937)† | .50 |

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

## Southwest Texas

(January 28, 1937)

| | |
|---|---|
| Pettus | 1.37 |
| Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski | 1.09 |
| Luling | 1.00 |
| Lytton Springs | 1.12 |

Saxet and Taft take same gravity table as Gulf Coast.

## North Louisiana and Arkansas

| | |
|---|---|
| Smackover, all grades | $ .90 |
| Tullos and Urania | 1.02 |
| El Dorado East field | .90 |
| Union County, Ark. | .90 |
| Ouachita County, Ark. | .90 |
| Lisbon, La. (Dec. 13, 1937)* | .98 |

*Caddo Crude Oil Purchasing Co.

## Gulf Coast

(January 28, 1937)

| | |
|---|---|
| Choctaw and Darrow, La. See note below | |
| Clay Creek, Tex. | $1.00 |
| Garden Island, La. | 1.37 |
| Cleveland, Tex. | 1.27 |
| Hardin, Tex. | 1.15 |
| Lafitte, La. | 1.24 |
| Livingston, Tex. | 1.27 |
| Welsh, La. | .98 |
| Tepetate (La.) (Jan. 28, 1937) | 1.24 |

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

## Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

| | |
|---|---|
| Lima | $1.00 |
| Illinois | 1.35 |
| Princeton, Ind. | 1.35 |
| Midland, Mich. (Jan. 5, 1938)* | 1.12 |
| West Branch, Mich (Dec. 29, 1937)† | .80 |
| Buckeye (Jan. 8, 1938) | 1.00½ |
| Arenac, Mich (Dec. 29, 1937)† | .50 |
| Muskegon, Mich. | 1.00 |
| Eastern Kentucky: | |
| Big Sandy River | 1.42 |
| Kentucky River | 1.50 |
| Western Kentucky | 1.40 |

*Posted by Pure Oil Co.
†McClanahan P. L. & Simrall
Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

## Eastern States

TIDE WATER ASSOCIATED OIL CO.
(Effective December 1, 1937)

| | |
|---|---|
| Bradford, Pa. | $2.20 |
| Allegany, N. Y. | 2.20 |

SOUTH PENN OIL CO.
(Effective December 1, 1937)

| | |
|---|---|
| Pennsylvania Grade Oil in National Transit Lines (Bradford field) | 2.20 |
| Pennsylvania Grade Oil in Southwest Pennsylvania Lines | 1.88 |
| Pennsylvania Grade Oil in Eureka Pipe Line lines | 1.82 |
| Pennsylvania Grade Oil in Buckeye Pipe Line lines | 1.70 |
| Corning Grade Oil in Buckeye Pipe Line Co.'s lines | 1.27 |

PENNZOIL CO.
(Effective December 1, 1937)

| | |
|---|---|
| Pennsylvania Grade Oil in National Transit Lines: | |
| Group A | 2.15 |
| Includes Cochran, Franklin, Hamilton and Doolittle districts. | |
| Group B | 2.14 |
| Includes Tidioute district. | |
| Group C | 2.13 |
| Includes Turkey and Tidioute districts. | |
| Group D | 2.12 |
| Includes Bear Creek and Porkey districts. | |
| Group E | 2.10 |
| Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts. | |

PURE OIL CO.
(Effective December 1, 1937)

| | |
|---|---|
| Cabin Creek, W. Va. | 1.82 |
| Bradford Hollow, W. Va. | 1.82 |
| Kelly Creek, W. Va. | 1.82 |

## Canada

Ontario (Sept. 9, 1933)*

| | |
|---|---|
| Petrolia | $2.19 |
| Oil Springs | 2.17 |

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(January 5, 1938, by Imperial Oil, Ltd.)

| | |
|---|---|
| Clear naphtha and discolored naphtha, 65 gravity and higher | $2.14 |
| Discolored naphtha and crude oil 40-40.9 gravity | 1.14 |
| Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity | 1.62 |

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

## Mexico

| | |
|---|---|
| Heavy Mexican crude | $.95 |

*In U. S. currency, f.o.b. ship, based on December spot market transactions.

## New York Market

*(Continued from Page 103)*

gaged in meeting shipping instructions from contract customers. It is known that one refiner has declined to shut down its cracking facilities long enough to permit repair of an affiliated unit due to acute demand.

Revival of demand and general business in Pennsylvania cylinder oil stocks featured the market last week in that refining district. Light fuel oils and kerosene continued among the strong items, but operators are gradually catching up with orders booked ahead and will be in position to offer these materials on the spot market in the near future unless further orders are received against contracts within the next two or three weeks. Figuring prominently in revival of the cylinder stock market was the demand from exporters. Dark cylinder stocks were the first to feel effects of the heavier demand, but bright stocks also figured in the trading toward end of the past week. Bright stocks ranged from 15½ to 19 cents per gallon while dark stocks were available from 9 to 16 cents per gallon depending on the quality.

Factors contributing to the greater interest last week in cylinder stocks in the Pennsylvania district, and to the inquiries placed for gasoline by exporters on the Gulf Coast, were headed by apparent effective restriction of crude oil production for remainder of the winter.

# Crude Prices by Gravities

| | Oklahoma-Kansas | Oklahoma-Kansas | North and Central Texas | East Central Texas (Mexia district) | North Louisiana-Arkansas | Gray County, Texas | Hutchinson-Carson counties, Texas | Rodessa, Louisiana-Texas and Panola County, Texas | Conroe, Tomball, Raccoon Bend, (Deep) Satsuma | Gulf Coast | Gulf Coast | Lea County, N. Mex. West Texas except Pecos County | Mirando district, Texas | Marion County, Texas | Refugio, Greta, Saxet, Taft, Texas | Anahuac, Flour Bluff, Dickson, Turtle Bay | White Castle, Louisiana | Iowa, Louisiana | Cayuga, Texas |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| Bel. 18 | .... | .... | .... | .... | .... | .... | .... | .... | .... | $.90 | .... | .... | .... | .... | .... | .... | .... | $.90 | .... |
| 18-18.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .92 | .... | .... | .... | .... | .... | .... | .... | .92 | .... |
| 19-19.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .94 | .... | .... | .... | .... | .... | .... | $.94 | .94 | .... |
| 20-20.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .96 | $.95 | .... | $.96 | .... | $1.01 | .... | .96 | .96 | .... |
| 21-21.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .98 | .98 | .... | .98 | .... | 1.03 | .... | .98 | .98 | .... |
| 22-22.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.01 | 1.01 | .... | 1.00 | .... | 1.05 | .... | 1.01 | 1.01 | .... |
| 23-23.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.04 | 1.04 | .... | 1.02 | .... | 1.07 | .... | 1.04 | 1.04 | .... |
| 24-24.9 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1.07 | 1.07 | .... | 1.04 | .... | 1.09 | .... | 1.07 | 1.07 | .... |
| Bel. 25 | .... | $.98 | .... | .... | $.90 | .... | .... | $.83 | .... | .... | .... | .... | .... | $.90 | .... | .... | .... | .... | $.88 |
| 25-25.9 | .... | 1.00 | .... | .... | .92 | .... | .... | .95 | .... | 1.10 | 1.10 | $.78 | 1.06 | .92 | 1.11 | .... | 1.10 | 1.10 | .90 |
| 26-26.9 | .... | 1.02 | .... | .... | .94 | .... | .... | .97 | .... | 1.13 | 1.13 | .80 | 1.08 | .94 | 1.13 | .... | 1.13 | 1.13 | .92 |
| 27-27.9 | .... | 1.04 | .... | .... | .96 | .... | .... | .99 | .... | 1.15 | 1.15 | .82 | 1.10 | .96 | 1.15 | .... | 1.15 | 1.15 | .94 |
| 28-28.9 | .... | 1.06 | .... | .... | .98 | .... | .... | 1.01 | .... | 1.17 | 1.17 | .84 | 1.12 | .98 | 1.17 | .... | 1.17 | 1.17 | .96 |
| Bel. 29 | $1.06 | .... | $.96 | $1.03 | .... | .... | .... | .... | $1.20 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 29-29.9 | 1.08 | 1.08 | .98 | 1.05 | 1.00 | .... | .... | 1.03 | 1.22 | 1.19 | 1.19 | .86 | 1.14 | 1.00 | 1.19 | .... | 1.19 | 1.19 | .98 |
| 30-30.9 | 1.10 | 1.10 | 1.00 | 1.07 | 1.02 | .... | .... | 1.05 | 1.24 | 1.21 | 1.21 | .88 | 1.16 | 1.02 | 1.21 | $1.16 | 1.21 | 1.21 | 1.00 |
| 31-31.9 | 1.12 | 1.12 | 1.02 | 1.09 | 1.04 | .... | .... | 1.07 | 1.26 | 1.23 | 1.23 | .90 | 1.18 | 1.04 | 1.23 | 1.18 | 1.23 | 1.23 | 1.02 |
| 32-32.9 | 1.14 | 1.14 | 1.04 | 1.11 | 1.06 | .... | .... | 1.09 | 1.28 | 1.25 | 1.25 | .92 | 1.20 | 1.06 | 1.25 | 1.20 | 1.25 | 1.25 | 1.04 |
| 33-33.9 | 1.16 | 1.16 | 1.06 | 1.13 | 1.08 | .... | .... | 1.11 | 1.30 | 1.27 | 1.27 | .94 | 1.22 | 1.08 | 1.27 | 1.22 | 1.27 | 1.27 | 1.06 |
| 34-34.9 | 1.18 | 1.18 | 1.08 | 1.15 | 1.10 | .... | .... | 1.13 | 1.32 | 1.29 | 1.29 | .96 | 1.24 | 1.10 | 1.29 | 1.24 | 1.29 | 1.29 | 1.08 |
| Bel. 35 | .... | .... | .... | .... | .... | $.96 | $.91 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| 35-35.9 | 1.20 | 1.20 | 1.10 | 1.17 | 1.12 | .98 | .93 | 1.15 | 1.34 | .... | 1.31 | .98 | 1.26 | 1.12 | 1.31 | 1.26 | 1.29 | 1.29 | .... |
| 36-36.9 | 1.22 | 1.22 | 1.12 | 1.19 | 1.14 | 1.00 | .95 | 1.17 | 1.36 | .... | 1.33 | 1.00 | 1.28 | 1.14 | 1.33 | 1.28 | 1.29 | 1.29 | .... |
| 37-37.9 | 1.24 | 1.24 | 1.14 | 1.21 | 1.16 | 1.02 | .97 | 1.19 | 1.38 | .... | 1.35 | 1.02 | 1.30 | 1.16 | 1.35 | 1.30 | 1.29 | 1.29 | .... |
| 38-38.9 | 1.26 | 1.26 | 1.16 | 1.23 | 1.18 | 1.04 | .99 | 1.21 | 1.40 | .... | 1.37 | 1.04 | 1.32 | 1.18 | 1.37 | 1.32 | 1.29 | 1.29 | .... |
| 39-39.9 | 1.28 | 1.28 | 1.18 | 1.25 | 1.20 | 1.06 | 1.01 | 1.23 | 1.42 | .... | 1.39 | 1.06 | 1.34 | 1.20 | 1.39 | 1.34 | 1.29 | 1.29 | .... |
| 40,over | 1.30 | 1.30 | 1.20 | 1.27 | 1.22 | 1.08 | 1.03 | 1.25 | 1.44 | .... | 1.41 | 1.08 | 1.36 | 1.22 | 1.41 | 1.36 | 1.29 | 1.29 | .... |

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun Vickers and Wilcox.

Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.

Column 3—All purchasers.

Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.

Columns 5, 6, 7 and 8—All purchasers.

Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tidewater Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)

Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)

Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.

Column 12—All purchasers.

Column 13—All purchasers (effective July 6, 1937).

Column 14—Magnolia Petroleum Co.

Column 15—Humble Oil & Refining Co. (effective July 6, 1937).

Column 16—Humble Oil & Refining Co.

Columns 17 and 18—Shell Petroleum Corp.

Column 19—Tide Water Oil Co.

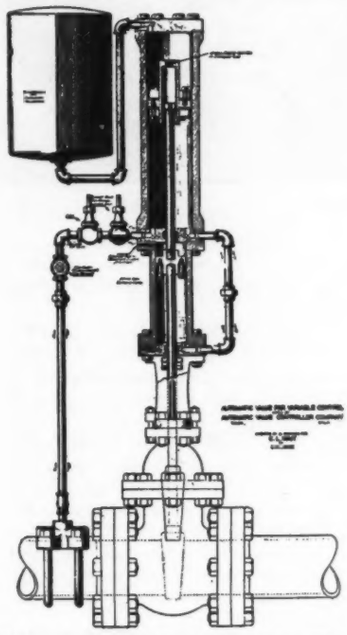
### LEGAL NOTICE

Call for Bids to purchase royalty oil accruing to the United States from the Lance Creek, Wyoming, oil field. Sealed proposals, in duplicate, will be received in the office of the Secretary of the Interior, Washington, D. C., on or before noon, February 28, 1938, from responsible bidders for the purchase, beginning April 1, 1938, of royalty oil accruing to the United States from Government lands in the Lance Creek, Wyoming, oil field. Detailed specifications on quantities offered for sale, required form of bids, deliveries, volume measurements, gravity determinations, bond requirements, and action on bids, should be obtained by prospective bidders from the Director, Geological Survey, Department of the Interior, Washington, D. C.; the oil and gas Supervisor, Geological Survey, Casper, Wyoming; or the Register, U. S. Land Office, Cheyenne, Wyoming. Sealed bids are to be submitted to the Secretary, Department of the Interior, Washington, D. C., pursuant to the specificati ns, the envelope to be marked plainly "Bid on Lance Creek royalty oil, not to be opened before noon, February 28, 1938." No bid received after the time fixed herein for submitting bids will be considered. (Sgd.) Harold L. Ickes, Secretary of the Interior.

# New or Improved Equipment

## Automatic Device Designed for Changes in Line Pressure

The automatic valve control, manufactured by the Automatic Valve Controller Co., Cosden Building, Tulsa, handles various loads above 25 pounds, in gas and liquid pipe lines. This control remains open during normal line pressure and automatically closes when sudden drop of pressure occurs. It keeps the valve closed until pumping is resumed. Provision is made to keep the line from closing during a slow decrease in the pressure line due to normal demand. The device is said to be adaptable to every pipe line need under all conditions, single and double lines, and river crossings. The automatic valve fills a need in refineries where two systems of water supply are used.



## Bulletins, Booklets and Other Literature for the Trade

Controlled air-circulation with the Swartout rotary ball-bearing ventilator, for industrial and commercial buildings, is discussed in an illustrated booklet of 20 pages prepared by Swartout Co., Cleveland, Ohio.

An attractive bulletin has been issued by Cavins Co., 2853-73 Cherry Avenue, Long Beach, Calif., illustrating and describing the Cavins automatic hydraulic suction bailer and fishing tool.

An 8-page folder offered by Janette Manufacturing Co., 556 West Monroe Street, Chicago, is devoted to electric motors, motorized blowers, blower-wheels, generators, motor generators, rotary converters, motorized speed-reducers, and electric plants.

The Rockwood Record, published by Rockwood Manufacturing Co., Indianapolis, Ind., describes and illustrates power drive equipment.

"Vitalizing Oil Wells Via Electricity" is among interesting articles in the current number of the International Trail, published by the International Harvester Organization, Chicago.

Oxy-acetylene achievements in 1937 are recounted in the latest issue of Oxy-Acetylene Tips, published by the Linde Air Products Co., New York.

The Burt free-flow fan ventilator is the subject of a bulletin obtainable from Burt Manufacturing Co., Akron, Ohio.

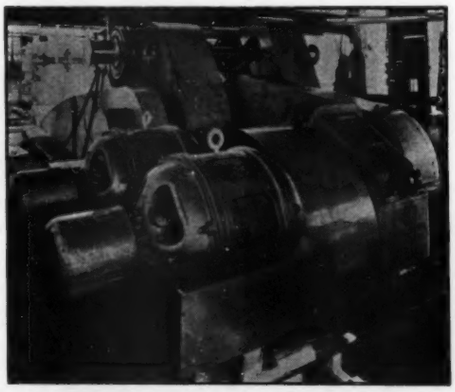
Hill Clutch Machine & Foundry Co., 6400 Breakwater Avenue, Cleveland, Ohio, has ready for mailing a catalog on machine-molded cast-iron pulleys.

The Marmon-Herrington high-speed track-laying tractor is the subject of a bulletin sent on request by Marmon-Herrington Co., Inc., Indianapolis, Ind.

## Thirty Years of Filtration

Oliver United Filters, Inc., celebrated its 30 years in the filtration business recently with a supper-dance in the Hotel Leamington, Oakland, Calif. Most of the company's 400 employes were present to give special recognition to the 109 who have been with the company 10 or more years. Talks were made by E. L. Oliver, president and general manager, and E. J. Sweetland, chairman of the board of directors, and other executives of the company. The company has manufactured filters ranging in size from small laboratory models to giant filters used in the heavy industries weighing 50,000 pounds each. The filters are used in the processing of oil, cement, sewage, salt and scores of other products. The company has grown steadily and now has on its engineering staff specialists in all forms of filtration who are experienced in serving the many different industries requiring filtration or clarification in their processes.

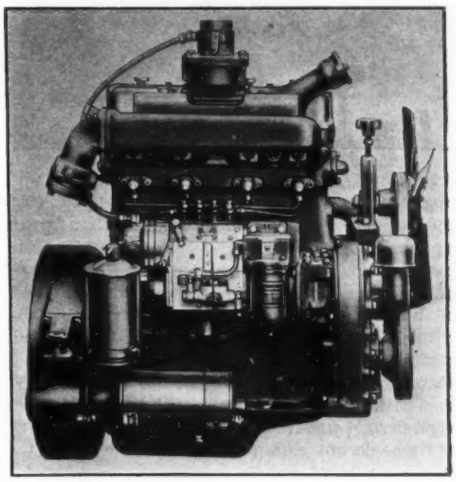
## MORE POWER FOR DEEP DRILLING



Barnsdall Oil Co. is using the most powerful alternating-current drilling rig for deep drilling near Newhall, Calif. This rig uses twin motors drawworks drive with two 125-horsepower motors of the gas-projected slip-ring type, direct conected to a twin drilling gear. One of these Westinghouse motors is used for drilling, catheading, and rigging up. Both are used for hoisting, developing a maximum of approximately 1,100 horsepower for handling large strings of drillpipe at high hoisting speeds.

## Addition to Line of High-Speed Diesels Announced by Buda

Another step in its program to provide a complete line of high-speed diesel engines is announced by the Buda Co., Harvey, Ill., with the introduction of a new model, the 4-DT-196, one of the smallest four-cylinder, four-cycle, portable diesels built.



The company now has 11 sizes of diesels in production, ranging from 20 to 220 horsepower.

The 4-DT-196, smallest of the Buda diesel line, was developed particularly for use in small trucks, small power shovels, and tractors. It is adapted to many types of oil-field work.

Model 4-DT-196 has a bore of 3⅝ inches, stroke of 4¾ inches and a displacement of 196 cubic inches. Its compactness permits interchangeability with most makes of gasoline engines of comparable power. The crankcase and cylinder castings are integral and are made of chrome nickel iron. The cylinder liners are easily removable. The crankshaft, which is carried in the block, is 3 inches in diameter, and has five wide precision-type main bearings. Connecting-rods are 9½ inches center to center. Lubrication is by positive force feed to all crankshaft bearings, connecting-rod bearings, valve rocker-arms, and timing gears.

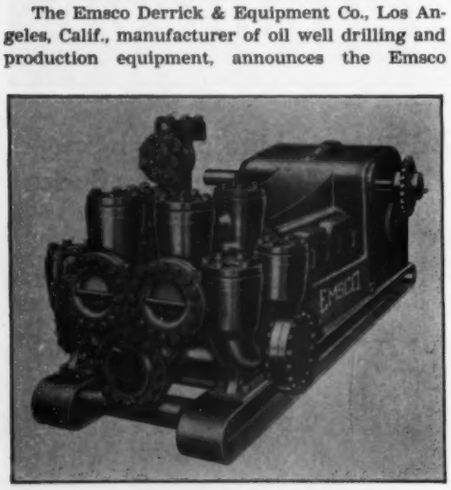
The controlled-turbulence combustion system is designed to assure smooth and smokeless operation and no auxiliary devices are required for starting.

## Anticorrosion Service Offered

The Steel Protection & Chemical Co., with main offices in Indiana Terminal Building, Indianapolis, Ind., is a newly organized company to manufacture a complete line of protective coatings for pipe lines and to offer a service designed to provide protection from corrosion, including a soil analysis survey, recommendation of the type of protection required, application of this protection or direct supervision and final inspection of the coating before the line is covered, with periodic examination after the line is in service and a guarantee of protection. L. R. Rogers, formerly of the Reilly Tar & Chemical Co., is president of the company and the inventor of the rolling rig and coupling coating device. He has had over 20 years of experience in the manufacture and application of coatings. The company's factory in Mooresville, Ind., will have a laboratory for research and study of pipe coatings.

## Emsco Introduces Field-Tested Slushpump of Forged Steel

The Emsco Derrick & Equipment Co., Los Angeles, Calif., manufacturer of oil well drilling and production equipment, announces the Emsco



forged-steel fabriform power slushpumps. Thoroughly field-tested, these pumps are said to offer the strength of steel construction with a great saving in weight. The fluid end, fabricated completely from steel forgings electrically welded, is of the direct-flow type. One-piece or divided types of fluid ends are available. The power end is fabricated from structural-steel shapes and plates, and cast alloy steel. The bearing housings for both shafts on each side are machined in a heavy alloy steel casting welded integrally with the frame. This assures rigid construction which, with a cross type of frame design, eliminates weaving under load.

An important feature is the positive system of mud-exclusion from the crosshead-chamber and crankcase. The frame barrels are divided into compartments by forward and after partitions. The former is demountable and carries a renewable rubber bushing which closely fits the piston-rod. Water flushing the pipes keeps the rod clear of any mud escaping from the fluid stuffing-box. The after partition carries the demountable stuffing-box for the crosshead extension rod and seals the forward end of the crosshead-chamber against foreign matter. The heavy crosshead extension rod receives the fluid piston-rod and permits the use of a short, less expensive rod. A steel and rubber baffle-plate at the junction of the rods is an additional obstruction to the entrance of mud. A sump at the after end of each crosshead-chamber stops the entrance of any foreign matter into the gear case, either coming from the fluid end or from the oil filler opening.

## Here and There With Men Who Manufacture Equipment

James Boyd, formerly assistant eastern district manager, has been appointed eastern district manager of the Westinghouse Electric & Manufacturing Co., succeeding H. F. Boe, who has become commercial manager, with offices in Pittsburgh. Mr. Boyd's headquarters will be in New York.

J. H. Mitchell-Roberts, export manager for Oliver United Filters, Inc., left Manila January 14 for Melbourne, Australia, where he will spend several months with the company's agent, Crosle & Duff Pty, Ltd. Mr. Roberts had been in the Philippines since early in 1937 covering the company's interests.

The James F. Lincoln Arc Welding Foundation, Cleveland, Ohio, sponsor of the $20,000 award program, has prepared a series of slide films showing the application of electric welding to various products and structures. The slides are available for engineering societies, technical clubs, trade schools, engineering colleges and any other groups desiring to use them.

Karl L. Flanders, for several years connected with Frick-Reid Supply Co. in East Texas, has joined the staff of Dowell, Inc., in its paraffin solvent division. He will maintain headquarters in Longview, Tex.

Union Wire Rope Corp. has appointed H. R. Cutlip assistant to H. R. Gruber, manager of oil-country sales. He formerly was division sales manager for Texas. His office will be at 601 Beacon Building, Tulsa, the company's headquarters for oil-country sales.

E. C. Oliver & Son, 412 Insurance Building, Dallas, Tex., has been appointed representative in Texas, Louisiana and Arkansas for the Nurnberg Thermometer Co., Inc., Brooklyn, N. Y. The line includes all types of thermometers and hydrometers for oil and petroleum tests.

Atlas Powder Co. has placed J. H. Buchanan in charge of its new sales office in the Field Building, 135 South La Salle Street, Chicago.

### Removes Grit and Dirt

On bearings, gears and other moving parts of machinery where oil is needed, the Acco-Morrow pressure lubricator, announced by American Chain & Cable Co., York, Pa., supplies lubrication at pressure up to 1,000 pounds. This flushes out grit and dirt from a machine and forces oil into the bearings. The "Oilingseal" tip, made of compressible composition, is one of the features. This tip makes a pressure-tight contact on the top edge of any common oil-hole and practically all sizes and types of cups and oil-hole covers in general use. No special fittings are needed.

## Plans for Introduction of Smith Meter Are Near Completion

Production and sales plans for the Smith Meter Co., 533 Roosevelt Building, Los Angeles, newly acquired subsidiary of the A. O. Smith Corp.,

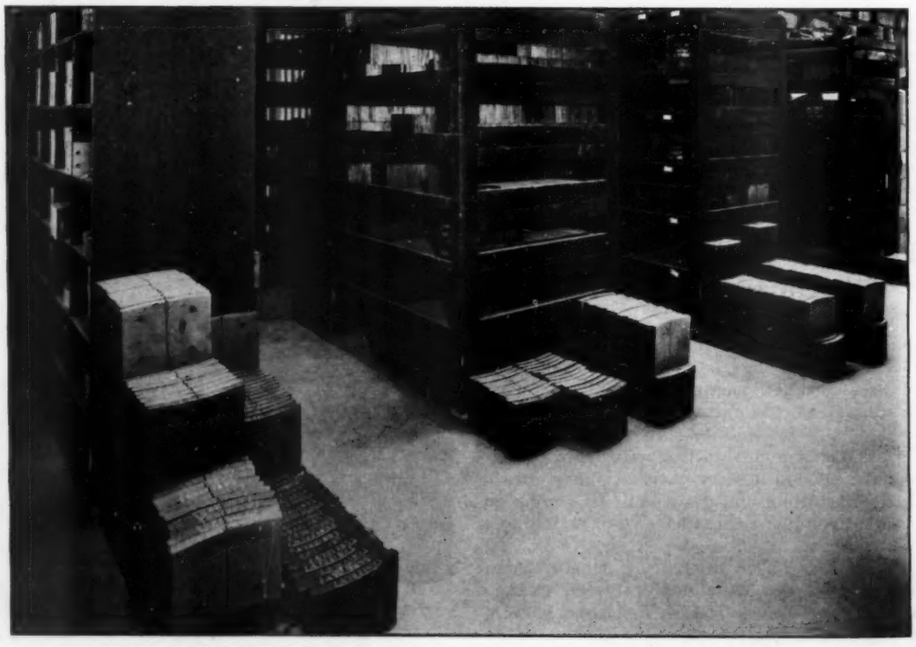
*Carl C. Joys* *Allan A. Floyd*

Milwaukee, Wis., are near completion, according to Carl Joys, vice president of the parent organization, and Allan Floyd, general manager of the subsidiary.

"The Smith meter," said Mr. Floyd, "is a highly engineered mechanism for measuring the flow of liquids, designed specifically for the petroleum industry, and to give the speed and accuracy required."

The two executives say the meter finds many uses throughout the oil industry. It is used for measuring the flow of crude oil and in the refinery for measuring gasoline as well as other liquid petroleum products. At the bulk plant it is used for dispensing to tank-trucks; and it is used on the tank-trucks themselves, insuring accurate, fair measure in delivery of gasoline to filling stations.

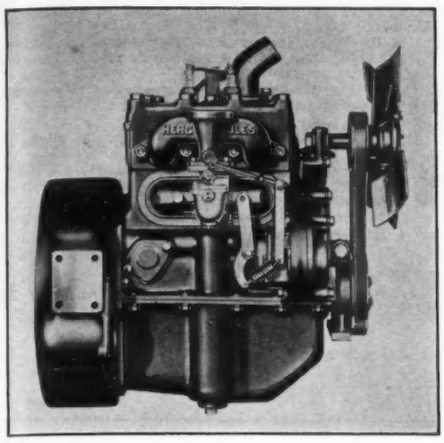
## GRIZZLY BRAKE-BLOCKS INSTALLED ON NEW BANDS



Here are shown some of the Grizzly rotary brake-blocks maintained in the large factory warehouse by the manufacturer, E. M. Smith Co., Los Angeles, Calif. These brake-blocks are now available to oil companies in connection with the Grizzly rotary brake-block band exchange, recently inaugurated by the manufacturer. Under this plan, Grizzly brake-blocks are installed at the factory on new bands for any type of rotary machine, at no extra cost, and delivered to the rig ready for use. It assures getting genuine Grizzly blocks of the correct size and type for each rotary, perfectly installed on the bands, at the same time eliminating all the labor and trouble of field installation. Complete stocks for all types of rotaries are carried by leading supply companies, as well as at the E. M. Smith Co. warehouse in Houston, Tex., and Oklahoma City, Okla.

## Two-Cylinder Gasoline Engine Is Added to Hercules Line

Hercules Motors Corp., of Canton, Ohio, introducing the NX series of engines and power units, has added two models of 2-cylinder, heavy-



duty units to its line of 4- and 6-cylinder gasoline and diesel engines. The internal dimensions of the NXA model follow: Bore 3, stroke 4, displacement 56.5; NXB model, bore 3¼, stroke 4, displacement 66.3.

These two engines are identical in general design and most of the parts are interchangeable, the only difference being in the bore size and the parts affected thereby. The maximum torque of the NXA is 39 pounds feet and 1,100 r.p.m., and that of the NXB is 46 pounds feet at the same speed. For continuous peak load service both models can be operated up to 1,800 r.p.m., at which speed the NXA develops 12.4 and the NXB 14.7 corrected horsepower.

To meet present-day conditions, which call for sustained high-speed operation, the practice of cooling the valves through the stems is employed. Updraft manifolds of either the center- or rear-outlet type can be furnished.

## New Diesel Battery Line

A line of specially constructed batteries for diesel starting service is announced by the B. F. Goodrich Co., Akron, Ohio. In the line are four 6-volt, two 8-volt, and ten 12-volt types. Eight are of conventional construction and eight are built with the Kathanode construction. Port Orford cedar separators are used in the conventional type. In the other type flexible spun glass Kathanode retainer mats are used on both sides of the positive plates, holding the active materials adjacent to them for a longer period and thus increasing battery life. Power is available instantaneously to ignite the fuel oil and start the motor in coldest weather.

## Field Engineer For Axelson

H. D. Collins, Tulsa oil man, has been appointed field engineer and special representative for the Axelson Manufacturing Co., of Los Angeles, Calif. His headquarters will be in Tulsa and he will cover the entire Mid-Continent area.

Mr. Collins spent more than 12 years with the Gulf Oil Corp. and has been identified with Mid-Continent manufacturing operations for many years. As a student of subsurface oil-well pumping methods and practices Mr. Collins has contributed to A.P.I. standardization and development of modern underground pumps, sucker-rods and tubing, besides developing equipment for handling and caring for them. He is chairman of the Mid-Continent A.P.I. committee for standardization of pumping equipment, and a member of the tubular goods committee.

Until his return to Tulsa in the spring Mr. Collins will reside in Los Angeles, studying Axelson manufacturing and operating methods and production methods in California oil fields.

## Two New Models of Chains for Well Drilling Announced

Chain Belt Co., Milwaukee, Wis., has brought out two new models of chain for oil-well drilling. One is the Rex Champion series, made of the A.P.I. 3 and the A.P.I. 4 sizes. Champion chain is made with the same principles of alloy steels, highly finished bearing surfaces and precision manufacture that are found in the Rex Deepwell chain. It is a heavier chain, with a higher ultimate strength and is recommended for extremely hard and deep drilling where excessive loads in the final stages of the deepest holes are the main factors. The side-bars on the Rex Champion No. 4 are accurately forged from alloy steel. Rex Champion No. 3 has an ultimate strength of 75,000 pounds, and the No. 4 an ultimate strength of 170,000 pounds.

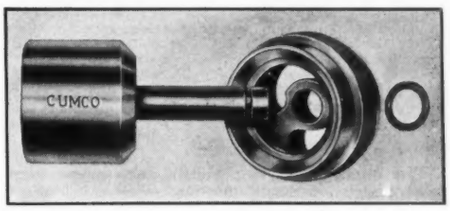
The other new chain is Rex Universal No. 3125, made in single or double strands for high-speed drilling. This chain is also made with the same precision and highly finished bearing surfaces which mark the other Rex oil-field chains. Its ultimate strengths are 150,000 pounds for the single strand and 230,000 pounds for the double strands. This chain does not run on the same sprockets as the A.P.I. 4.

## Clemens Mid-Continent Agent

Martin-Decker Corp., Long Beach, Calif., which specializes in drilling-control and oil-well measuring instruments, has appointed Jack Clemens as its Mid-Continent representative. Although new to the Mid-Continent, Mr. Clemens has been with the Martin-Decker organization almost 10 years, and is thoroughly familiar with the many scientific instruments which comprise the Martin-Decker line. He will work in conjunction with the Reed Roller Bit Co., which handles the Martin-Decker products in the Mid-Continent, with his headquarters in Odessa, Tex. From there he will cover the West Texas, Southwest Texas and New Mexico territories.

## Guide Insures Correct Seating of Drop and Regulates Lift

Drop-and-seat valves of a type which the manufacturers say has much to commend it are being introduced by the Ball Valve Seat Grinder Co., 204 North Beech Street, Syracuse, N. Y. The guide is designed to insure perfect seating of the drop, and it regulates the lift, no matter how long the valve



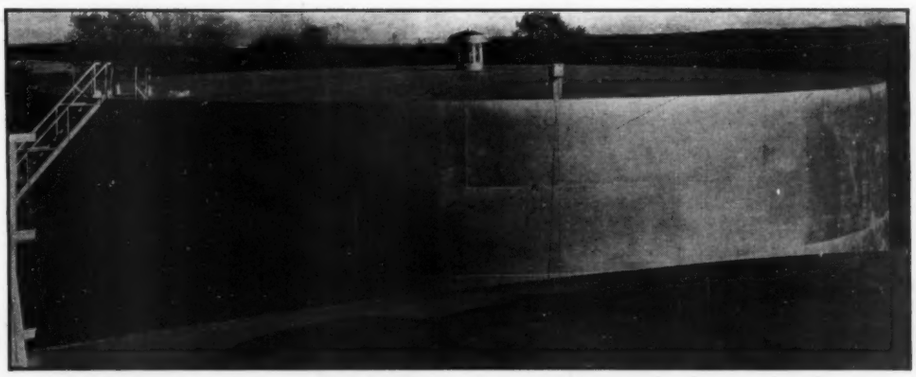

crowns. The ball-like chamfer of the seat, to which the drop is fitted, prevents foreign material from lodging between the drop and the seat. The seat is tapered to insure a perfect fit to any standard valve body.

These drop-and-seat valves are made of bronze, for semi-acid wells, and of noncorrosive metal for wells pumping salt water and for other acid conditions. They are said to provide long and uninterrupted service in wells where ball-and-seat valves are not satisfactory.

## Col. Rockwell Back From Europe

Col. W. F. Rockwell, president of the Pittsburgh Equitable Meter Co. and Merco Nordstrom Valve Co., has returned from a European tour in which he devoted two months to visiting factories and conferring with officials of seven different companies which manufacture liquid meters, gas-pressure regulators and Nordstrom valves in England, Belgium, France, Germany and Italy. He studied the latest European methods of production and made arrangements to take over several European patents. The trip was to follow up that of one of the companies' representatives who accompanied the Industrial Research Council on its tour of Europe and made a study of new developments.

Colonel Rockwell took the opportunity to inspect military trucks manufactured for the Belgium government and using patents he developed for the Allied forces during the World War.



Close-up view of a Wiggins breather roof on an 80,000-bbl. tank at the Bettendorf, Iowa, terminal of the Shell Petroleum Corp. This tank and the 55,000-bbl. tank (also equipped with a Wiggins breather roof) from which the photograph was taken were built by the Chicago Bridge & Iron Co. The picture shows the vacuum and volume control valve at the center of the larger tank roof.

## Oil Man's Calendar

### February

7-9—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel

14-15—Wichita, Kans. Kansas Oil Men's Association, twenty-fourth annual convention, Hotel Broadview.

14-18—New York, American Institute of Mining and Metallurgical Engineers, annual meeting, Engineering Societies Building.

15—Kilgore, Tex., East Texas Chapter A.P.I., at High School Auditorium.

16-17—Peoria, Ill., Illinois Petroleum Marketers Association, annual convention, Pere Marquette Hotel.

17-18—Amarillo, Tex. American Petroleum Institute, Division of Production, spring meeting, Herring Hotel.

22-24—Milwaukee, Wis., Wisconsin Petroleum Association, Schroeder Hotel.

22-24—Columbus, Ohio, Ohio Petroleum Marketers Association, fifteenth annual convention and marketing exposition, Deshler-Wallick Hotel.

### March

2-3—Indianapolis, Ind., Indiana Independent Petroleum Association, spring meeting.

2-4—Des Moines, Iowa, Iowa Independent Oil Jobbers Association and Trade Exhibit, Fort Des Moines Hotel.

7—Rochester, N. Y., American Society for Testing Materials, Spring Regional Meeting and Group Committee Meetings.

16-18—New Orleans, twenty-third annual meeting, American Association of Petroleum Geologists, Roosevelt Hotel.

21-22—Oklahoma City. Oklahoma Utilities Association.

21-22—St. Louis, Mo., Liquefied Petroleum Gas Association, annual meeting.

23-25—Los Angeles, Calif. American Society of Mechanical Engineers.

24-25—Fort Worth, Tex. American Petroleum Institute, Division of Production, spring meeting, southwestern district, Blackstone Hotel.

### April

4-6—Cincinnati, Ohio, A.G.A. Distribution Conference, Netherland Plaza.

13-15—Cleveland, Ohio, National Petroleum Association.

13-15—Houston, Tex., Petroleum Industry Electrical Association.

14-15—Pittsburgh, Pa. Eastern District A.P.I. Division of Production, William Penn Hotel.

17-21—Dallas, Tex.. American Chemical Society

19—Los Angeles, Spring meeting, Pacific Coast district, A.P.I. Division of Production, Biltmore Hotel.

19-21 — Norman, Okla. Gas Measurement Short Course.

20-22—Buffalo, N. Y., American Institute Mining and Metallurgical Engineers, Open Hearth Conference.

25-27—Hot Springs, Ark., Western Petroleum Refiners Association annual meeting.

### May

11-13—Tulsa. Natural Gasoline Association, Hotel Tulsa.

12-14—Tulsa. National Oil Scouts Association of America.

14-21—Tulsa. International Petroleum Exposition.

23-25—Wichita, Kans. American Petroleum Institute, eighth midyear meeting.

(?)—New Orleans, La. American Gas Association. Natural Gas Department.

### June

6—Houston, Tex. Oil Workers International Union.

16-18—Pittsburgh, Pa. Pennsylvania Grade Crude Oil Association.

20-24—St. Louis, Mo. American Society of Mechanical Engineers.

### September

14-16—Santa Barbara, Calif., annual meeting Pacific Coast Gas Association, Biltmore Hotel.

### October

——Tulsa, I.P.A.A., annual convention.

# CLASSIFIED ADVERTISING

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### Royalties

ROYALTIES PURCHASING TRUST, LTD., Moorgate Hall, Moorgate London, E. C. 2., England, are buyers of producing oil royalties.

ROYALTY BUYERS who want to buy at pre-development prices should act now. Panola County, an East Texas Border County is now best wildcat area in East Texas. Leases mostly controlled by major companies. Address inquiries to P. O. Box 365, Henderson, Texas.

### Royalties

**ANDREW J. BARRETT**
**The Philtower**
**Tulsa, Oklahoma.**

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

### Brokers—Salesmen

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This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

## CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

| | 1 time | 2 times | 3 times | 4 times | | 1 time | 2 times | 3 times | 4 times |
|---|---|---|---|---|---|---|---|---|---|
| *3 Lines* | *$1.05* | *$1.80* | *$2.55* | *$3.30* | *7 Lines* | *$2.45* | *$4.20* | *$5.95* | *$7.70* |
| *4 Lines* | *1.40* | *2.40* | *3.40* | *4.40* | *8 Lines* | *2.80* | *4.80* | *6.80* | *8.80* |
| *5 Lines* | *1.75* | *3.00* | *4.25* | *5.50* | *9 Lines* | *3.15* | *5.40* | *7.65* | *9.90* |
| *6 Lines* | *2.10* | *3.60* | *5.10* | *6.60* | *10 Lines* | *3.50* | *6.00* | *8.50* | *11.00* |

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

**THE OIL AND GAS JOURNAL**
Tulsa, Oklahoma